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IFAN-Guide 2
Company use of international standards

INTERNATIONALE FÖDERATION DER AUSSCHÜSSE NORMENPRAXIS
INTERNATIONAL FEDERATION FOR THE APPLICATION OF STANDARDS
FEDERATION INTERNATIONALE DES ASSOCIATIONS POUR LA PRATIQUE DES NORMES

IFAN

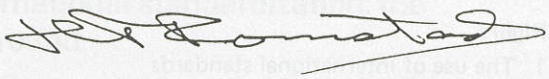
British Standards Institution

Foreword

It is beyond dispute that international standards facilitate international trade, while national standards in some instances are seen as barriers. The daily use of international standards in dealings between companies is the fulfilment of the intent of international standardization.

The promotion of uniform implementation of international standards is a main objective of IFAN and Guide 2 is an important contribution towards this aim. Uniform implementation may be achieved by direct use of international standards or through the medium of equivalent national standards. This guide gives a short and concise explanation of how to make the best use of international standards, which in the nomenclature of IFAN, are particularly those of The International Organization for Standardization and The International Electrotechnical Commission.

IFAN is indebted for this publication to the members of Working Group d and its convener Mr. J.D.J. Hawksley of the British Standards Society.



H.T. Romstad
President of IFAN

Introduction

The International Federation for the Application of Standards (IFAN) is an association representative of the national organizations concerned with the application of standards. (For further information see appendix C.)

At the centre of IFAN's activities there is a strong interest in helping companies to make the best use of International Standards and, reciprocally, to help make International Standards suitable for company use.

A working group, IFAN WGd, was set up to study the implementation of International Standards at company level. Its terms of reference were 'to identify and develop recommendations to facilitate the use of International Standards by companies'. At the second IFAN Conference in Berlin in 1977 WGd made its first report on:

(a) the kind of International Standards needed; and

(b) how the existing standards of ISO and IEC were being used in the various countries.

After further research, which included analysis of the standards activities of companies in many countries, members of WGd presented certain recommendations at the third IFAN Conference in London in 1980. WGd then analysed the extent to which these recommendations had or had not been adopted and presented a report at the fourth IFAN Conference in Vienna in 1983 (see clause 3).

It was decided at the 1984 Members' Assembly that, instead of further study and presentations at conferences, the interests of IFAN Members and of companies throughout the world would be best served if a guide were published encapsulating all that had been learnt on the subject in the ten years since IFAN was founded; hence this guide.

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1 Object

It is the object of this Guide to help companies and enterprises world-wide to make the best use of international standardization, both to their own advantage and in the general interest. The Guide gives advice on when International Standards should be used and how they should be used and also on the international aspects of quality assurance as related to standardization.

2 International standardization: the background

International standardization is a consequence of the development of international trade and technical collaboration and it is an essential requirement for their further development. It has been made possible by the collaborative efforts of national standards organizations with the support of producers, consumers and governments all over the world.

At the beginning of the 20th century, national standardization in electrical engineering had generally advanced further than in other technologies and in 1906 the national electrotechnical committees of 14 countries cooperated to form the International Electrotechnical Commission (IEC). Its headquarters were initially in London but in 1947 the IEC Central Office was transferred to Geneva.

Meanwhile, national standardization in the other technologies had gathered pace and in 1926 international collaboration was extended to other fields by the setting up of the International Federation of the National Standardizing Associations (ISA). ISA however did not survive the outbreak of the Second World War in 1939.

25 national standards bodies cooperated in 1947 in the setting up of the International Organization for Standardization (ISO). The Central Secretariat of ISO was established with the Central Office of the IEC in Geneva.

The aim of ISO, as given in Article 2 of its Constitution, is 'to promote the development of standardization and related activities in the world with a view to facilitating international exchange of goods and services and developing co-operation in the sphere of intellectual, scientific, technological and economic activity'. The aims of IEC are similar.

For historical reasons standardization in the field of electrotechnology is covered by IEC while ISO covers all other fields. The two organizations, their memberships now greatly expanded, together provide and promote international standardization across all technologies. Unless otherwise qualified, 'international standardization' when used in this Guide means the work of ISO/IEC and 'International Standards' refer both to the standards of ISO and to the publications of IEC. The addresses of ISO and IEC headquarters are given in clause **10** and additional notes are included in appendix A.

ISO and IEC have become increasingly involved in quality assurance. The work of preparing standards is closely interwoven with the tests they specify and the inspection and assessment that are necessary to verify compliance or obtain certification (see clause **12**).

It must be emphasized that ISO and IEC are not remote international offices, answerable to no-one. They depend entirely on the world's manufacturers, service industries and users working through the ISO and IEC national member bodies. ISO and IEC headquarters in Geneva administer this work but at the technical level it is coordinated entirely by the national member bodies which act as the secretariats of the technical committees responsible for preparing International Standards. The experts on these technical committees, and their sub-committees and working groups, are nationally chosen from those concerned with the relevant industry or subject. By far the greater part of the work of ISO and IEC is done at the national and indeed the company level and by far the greater part of the cost of ISO and IEC operations is borne at those levels. The ISO and IEC member bodies are each a local office of the headquarters in Geneva. ISO and IEC are not 'them'; they are 'us'.

Outside the fields covered by ISO/IEC there are other international bodies concerned with standards in particular fields. Most of these are intergovernmental organizations and many of them are specialized agencies of the United Nations, e.g. the Codex Alimentarius Commission (CODEX) which sets standards on such subjects as food hygiene. A list (not comprehensive) is given in appendix A. The ISO KWIC Index of international standards lists some 9000 standards prepared by 29 international standardizing bodies.

3 The IFAN recommendations

3.1 'It should be noted by the international and national standards bodies that companies prefer to make indirect use of ISO and IEC standards through the medium of national standards.'

This recommendation was made with two aims. Firstly that it would help ISO and IEC to concentrate on the use to which their standards would be put. The format and the contents should be designed so that they are suitable for reproduction as a national standard either directly in one of the official languages or through precise translation into another language.

The second aim was that the national standards bodies of all IFAN countries and for that matter those outside IFAN should be encouraged to promulgate International Standards as their own national standards. The ideal is an identical standard but a good second best is a technically equivalent standard. The use of International Standards through adoption or part adoption as national standards must be considered at the beginning of the drafting stage. The fact that International Standards will have been adopted and published in many countries as national standards must be taken carefully into account when considering their revision or the methods by which they are amended.

The recommendation can only be applied in regard to an International Standard where there is no restriction imposed by national legislation or regional agreement that would make it inapplicable or might stipulate its application in an altered version, e.g. the modified adoption of certain IEC standards within the European Economic Community (EEC).

3.2 'There is a great need for more International Standards to be published by industrially influential countries as identical, or at least technically equivalent, national standards.'

This recommendation follows on from **3.1**, its aim being to encourage the use of International Standards by example and practice. It is endorsed by ISO/IEC Guides 3 and 21* which are intended for the use of national standards bodies.

3.3 'Countries voting for International Standards should adopt them nationally.'

This requires a change in attitude among the national standards bodies which do not do so.

3.4 'The exact relationship between a national standard and its international counterpart should be clearly stated and a system of symbols of equivalence should be agreed internationally. Where deviations from the International Standard are made they should be clearly indicated.'

It is very important to manufacturers and users that they can choose an International Standard easily from a nationally compiled list. The publication of International Standards as national standards loses much of its value unless the exact relationship between the two can be stated.

In regard to relationships and symbols of equivalence, ISO/IEC Guide 21 Addendum No. 1 now sets out the necessary designations and symbols to meet this recommendation. These are shown in table 1 and are intended for use in catalogues and information services. These designations effectively remove the dubious idea of a 'minor technical deviation'. In standardization there is no such thing. Any technical deviation is a potential obstacle to trade and puts the standard in the 'related' category (see **6.2.4**).

The procedures for indicating and explaining deviations from an International Standard in the corresponding national standard are now given in ISO/IEC Guide 21 (see **6.2.3** and **6.2.4**).

3.5 'Greater alignment, preferably complete, is needed between IEC and ISO in the production and presentation of standards.'

ISO and IEC have been progressing the development of common procedures. The joint approval of several ISO/IEC Guides, including Guides 3 and 21, and the presence of both logos on the covers indicating equal authority shows an encouraging trend. With the ever increasing integration of electrical and electronic equipment into systems of all technologies, there is no reasonable argument for separating electricity from the other technologies of standardization. Joint committees of these two international standards organizations are now actively working towards the alignment of procedures and also on the difficult problem of sorting out the coverage of technical committees.

3.6 'In International Standards the stating of alternatives or the provision of different grades should be adopted rather than a compromise which satisfies no one.'

This principle has been accepted and is included, for example in Part 2 of the ISO Directives. There it is emphasized that an ordered, limited set of values, which covers essential differing national circumstances and which can be easily identified in the designation of the standard product, will ensure the harmonization of national standards and eliminate technical barriers to trade.

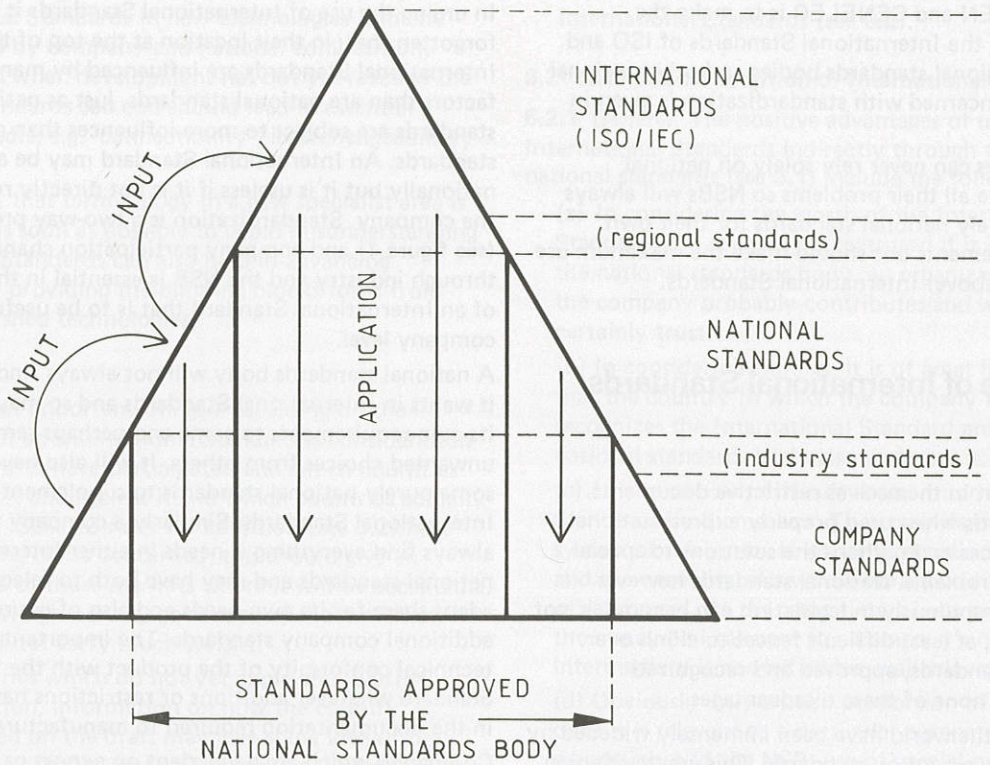
4 The three levels of standardization

It is a well known concept that there are three basic tiers of standardization: company, national and international (see figure 1). Each tier has its particular uses and it is a fallacy to believe that there will ever be no need for all three to go on co-existing, but each tier should make the maximum use of standards issued by the appropriate organization in the next tier up. Because of the company-based constitution of the national standards committees

* ISO/IEC Guide 3: Identification of national standards that are equivalent to International Standards

ISO/IEC Guide 21: Adoption of International Standards as national standards

Addendum 1: Indication of the degree of equivalence between national standards and International Standards.



NOTE. The diagram can be expanded or simplified to give varying national or industrial conditions. In some areas regional standards are important. In some industries standards are issued by trade associations ('industry standards').

Figure 1. The use of International Standards

and the national basis of the international standards making committees this is a two-way process and each tier will have contributed to the one above and will benefit from it.

The first and most important level in any country is the company. The word 'company' may be taken here to mean anything from a large government department to a small private firm, or from a multi-national corporation to a local farm. The company is the unit of enterprise which makes things or gives a service to people.

Any company may set up its own standards and use them. It has to for good management. The sensible way to write a company standard is to see what is available from the next tier up, i.e. national standards and to make maximum use of them. National standards however will never be sufficient by themselves. Companies will often need to amplify or qualify material standards to meet their own particular requirements. They will also need to make their own standards for their own production procedures and for that element of their product which is original and unique and without which they could not sell it competitively.

A major element of national standardization is the banding together of companies in their own interest and in a disciplined way to simplify production and distribution, where it is to their mutual advantage, and to eliminate the waste of time and material involved in the production of unnecessary variety and in the individual research and design of common items. This banding together is, by custom, organized by the national standards body (NSB) which, while it may not be an arm of government, must have its activities recognized by government. Influences on national standardization are more diverse than in the company, but a national standard can often be used as the basis for a company standard, which may for example restrict more precisely a multiplicity of variants which has already been restricted in the national standard.

International standardization is the banding together of the NSBs, in the interests of the companies they serve, to achieve the same object all over the world. In some areas regional standardization is important. That too is operated through the NSBs and the main object of regional standards bodies such as CEN and CENELEC is to make the maximum use of the International Standards of ISO and IEC. A list of regional standards bodies and other regional organizations concerned with standardization is given in appendix A.

Just as companies can never rely solely on national standards to solve all their problems so NSBs will always need to have purely national standards for their own particular requirements but should make the maximum use of the next tier above: International Standards.

5 The choice of International Standards

5.1 Trade

Standards are not in themselves restrictive documents. National standards when used properly express national market preferences and perhaps the solutions to special environmental problems. National standards however when used unscrupulously in legislation can become, if not barriers to trade, at least difficult fences to climb over. International Standards, approved and recognized nationally, have none of these disadvantages.

The markets of the world have been immensely widened by international agreement on standards. This great widening of opportunities for the manufacturer has of course also widened the competition. Its advantages can only be seized by the company with good productivity, good delivery time and good after-sales service. In the export market it works to the advantage of the efficient and to the disadvantage of the inefficient. It is in no way a panacea for industry's troubles but it can act as a great stimulant to overcome them.

International standardization also gives a much wider field of choice to the importer. Imports to International Standards may confidently be used either direct or as components in manufacture, perhaps the manufacture of whole machines for export, in the knowledge that through international standardization they are not only interchangeable wherever they are to be used but fit for their purpose and safe.

Used properly and perhaps selectively these two factors can bring great financial advantage.

Through the adoption of International Standards as national standards, those countries which have adopted them have the best of both worlds. They have a system which allows the same standard to be claimed both as the national standard of the country producing something and as the national standard of the country to which they are exporting (see **6.2**). International Standards have been shown to be an effective means of removing technical barriers to trade and are recognized as such by the GATT Agreement on Standards (also known as the 'GATT Standards Code').

The same product can then be marketed anywhere and, because this reduces unnecessary manufacturing variety, costs will come down and the item will be more competitive.

5.2 Comparisons

In urging the use of International Standards it must not be forgotten that, in their location at the top of the pyramid, International Standards are influenced by many more factors than are national standards, just as national standards are subject to more influences than company standards. An International Standard may be adopted nationally but it is useless if it is not directly relevant to the company. Standardization is a two-way process (see figure 1) and company participation channelled through industry and the NSB is essential in the preparation of an International Standard that is to be useful at the company level.

A national standards body will not always find everything it wants in International Standards and so may have to add its own requirements to some and perhaps remove unwanted choices from others. It will also have to prepare some purely national standards to supplement the adopted International Standards. Similarly a company will not always find everything it needs in either international or national standards and may have both to select from and adapt them for its own needs and also of course issue additional company standards. The important thing is technical conformity of the product with the International Standard whatever additions or restrictions have to be made in the documentation required to manufacture to it.

Companies which are dependent on export or import will expect to derive more value from International Standards or national standards based on them than companies which operate only at the national level. A national standard however which is derived from an International Standard also throws competition in the home market more open to foreign competition and hence forces the home manufacturer to be more competitive and to improve his product. This is a desirable object for everybody.

Nevertheless for the reasons already given and because national standards are often essential in meeting the requirements of a particular market it will of course often be necessary to use them both for exports and imports. A list of abbreviated designations for national and other standards, indicating the country of origin, is given in appendix B.

5.3 Designation

A further advantage of the use of International Standards by a company is the opportunity it gives for the recognition and comparison of its products by internationally agreed methods (see clause **9**) which can, if required, be combined with a national designation.

5.4 Language

Language can be a problem in the direct use of an International Standard but the method of use through national adoption (see **6.2**) overcomes this. If the national standards body registers a translation into the national language for recognition by ISO or IEC this enables conformity to be claimed.

5.5 Advanced technology

It is a mistake to believe that standards can ever satisfy all the needs of technological development. By its definition a standard often has to wait for the stabilization of development before it is written and the putting together of International Standards in new technologies is in any case hampered by company and national competition. However, even when development has not yet reached the final stage, standards can and should lead in essential governing aspects, e.g. 'connectibility', interchangeability, reliability.

It is important that terminology in a new specialist area is standardized as soon as possible to avoid misunderstanding in later work. Standards can also help in advancing technology by providing the building blocks for it from already established technologies.

5.6 Approval

One of the most important things in deciding on the company use of an International Standard is consideration of which countries have participated and which countries have voted for it and against it and which countries actually apply it. If the ISO/IEC rules for adoption (see **6.2**) have been used by the NSBs concerned, this should give an immediate idea of those markets where it will be acceptable. Conversely it will give a very good idea of those markets in which it will not carry much weight.

In those countries which do not yet apply the ISO/IEC rules for adoption, information on how the country concerned voted on the draft may give some idea of the acceptability or otherwise of an International Standard in a particular area. This information should be treated with caution and it can be positively misleading after a gap of a few years. The information on voting results used to be published as part of ISO International Standards. It can still be obtained from the ISO Central Secretariat or through the NSB (see clause **11**). The same information is available in IEC voting reports to which reference is made in IEC publications.

6 The methods of using International Standards

6.1 Direct use of International Standards

International Standards are designed to be used in two ways: directly, or indirectly through their adoption as national standards. For direct use they are published by ISO and IEC with a coherent system of references, catalogues etc. Direct use is recommended for all situations where national adoption may be inapplicable, e.g.:

(a) export (sales literature);

(b) multinational companies;

(c) regional standards organizations;

(d) companies in countries which do not have a formally organized national standards system;

(e) companies in countries where the NSB does not operate in the particular field covered by the International Standard;

(f) companies in countries whose NSB has not implemented the ISO/IEC rules for the adoption of International Standards (see **6.2**).

6.2 The national adoption of International Standards

6.2.1 *General.* The positive advantages of using International Standards indirectly through the medium of national standards (see **3.1**) include the following.

(a) In considering the worth of the International Standard, the company is reassured if it is endorsed by the national standards body, an organization to which the company probably contributes and which it should certainly trust.

(b) In considering exports, it is of great help to know that the country to which the company is exporting recognizes the International Standard and that its national standards body also endorses it.

(c) It is sometimes difficult to use International Standards by themselves. They may demand a whole system of references to other International Standards and the necessity of a whole library to cover that system of references. At the same time a large proportion of them may be irrelevant to a company's needs. An intermediary is needed and is available: the NSB.

(d) Obviously only a small proportion of an NSB's output is relevant to a particular company but, by membership of the NSB, use of special ordering facilities, etc,, the company can make sure it has everything from the NSB that is relevant. This should include any International Standards that it wants to use.

(e) While some international organizations have liaison status with ISO and IEC technical committees, direct participation in the preparation of International Standards can only be achieved by national companies or the nationally based parts of multinational companies contributing to technical committee work through the NSB which is itself a full member body of ISO or IEC.

(f) ISO and IEC issue standards directly in only two of their 'official' languages (English and French). An International Standard adopted as a national standard may have been translated into the national language. This is an enormous advantage in those countries which do not use the 'official languages'. It provides a translation which is recognized by ISO/IEC and therefore enables the claim to be made that the product conforms to the standard without any risk of misunderstanding.

All this is understood by ISO/IEC and rules for recognizing the essential relationships of national standards to International Standards are set out in ISO/IEC Guides 3 and 21 with Addendum 1 (see table 1). Under these rules national standards are graded in their degree of equivalence as described in **6.2.2** to **6.2.4.**

Table 1. Indication of relationship between national and international standards
(adapted from ISO/IEC Guide 21 Addendum 1)

Description	Designation	Abbreviation	Symbol
Totally equivalent in technical content and fully corresponding in presentation	Identical	IDT	≡
Equivalent in technical content but not fully corresponding in presentation	Equivalent	EQV	=
Significantly related but not equivalent in technical content	Not equivalent*	NEQ*	≠

* In some countries the designation 'related' (abbreviated 'REL') is used instead of 'not equivalent' ('NEQ').

6.2.2 *Identical.* The national standard is identical with the International Standard both in technical content and presentation. The full text of the International Standard is reproduced in the national standard. Nothing is added except minor explanation and clarification and that can be added only in a clearly separate format, e.g. in a 'National foreword'. Clause numbers are the same and if the national standard is published in a language other than the original (normally English or French), the translation is certified as official by the national standards body undertaking it and a copy is lodged with ISO or IEC.

What is called 'the vice versa principle' applies, i.e. anything acceptable under the terms of the International Standard will be acceptable under the terms of the national standard and vice versa. All references in catalogues to the standard should indicate that it is both an International Standard and a national standard. This is made even clearer if a dual identification is used as described in ISO/IEC Guide 3 (see **8.3**).

6.2.3 *Equivalent.* The national standard is equivalent in technical content to the International Standard but does not correspond fully in presentation. This might mean for example that the clause numbering is different or that information shown graphically in one standard is shown in a table in the other. Sometimes it means that what in one system is issued as one standard is issued as several standards in the other. As long as there are no technical differences, the vice versa principle is still met. Anything made to the national standard will conform to the International Standard but the standard cannot bear a dual identification as references to individual parts of the text may differ. As with the previous category, a company complying with the national standard will be able to claim compliance with the International Standard and hence any other national standard that is either identical with or technically equivalent to it.

There should be the clearest possible reference in a separate place in the standard to indicate that the International Standard may be used in lieu of that standard and references in catalogues should indicate this. There should also be an indication in the national standard of the differences in presentation. In terms of international trade the two categories are the same but in this second category the identity is obscured slightly by the very minor differences. It could be said that this sort of standard should be avoided if possible. The national member bodies of ISO and IEC have by now had every opportunity to contribute to the Directives which determine how International Standards are written and at the same time they have had every opportunity to harmonize their own methods with internationally accepted methods. If there are genuine technical differences that is another matter because, however minor, no technical difference is so minor that it does not count. In the latter case only the third category in table 1 can apply.

6.2.4 *Not equivalent but related.* This category has in the past been referred to simply as 'not equivalent' but that was too negative a description for standards that contained only a few differences. This category covers the very large field in which use has been made of internationally agreed requirements but, for national reasons, it has not been possible to adopt them completely. This can include such cases as the following.

(a) The national standard contains less than the International Standard, it allows choices or has lower requirements, etc. Mutual acceptability is not fulfilled and it cannot be claimed that a product made to the national standard fulfils the international requirements.

(b) The national standard contains more stringent requirements than the International Standard. While mutual acceptability is not fulfilled, it can be claimed that a product made to the national standard fulfils the requirements of the International Standard and hence any other national standard which is identical or technically equivalent to it.

(c) The national standard and the International Standard overlap. Part of the content is identical or technically equivalent but both national standard and International Standard contain items not included in the other.

Again, while it is not possible to give a dual identification to the standard, it is still important to identify these standards, stating as prominently and as clearly as possible in the foreword or in explanatory notes where the standard is technically the same as the International Standard and explaining the differences. These may be the elements that the customer is looking for. It is again imperative that the catalogues of the NSB show that there is some relationship between the national and the International Standard.

Identification in the text and, where suitable, in catalogues, can be applied just as usefully when a national standard is related to a standard or document issued by an international body other than ISO or IEC (see clause **2** and appendix A).

6.2.5 *Adoption in practice.* This system of classification and reference of ISO and IEC is perhaps the most useful contribution ever made to the harmonization of world standards. To give an example of this system in use, one major NSB* puts 70 % of its standard-making effort into international standardization, working through international standardization towards the production of national standards which can be used internationally. It has about ten thousand national standards. Two thousand of these or 20 % are *identical* with International Standards, dual-numbered, marked and catalogued as such. A further thousand national standards are *technically equivalent* and another thousand are in the category of *'related'*. Forty per cent of the national standards issued by that NSB are therefore connected in an identifiable way with the international standards system and as new standards are issued this proportion is increasing.

6.3 The use of 'de facto' international standards

If there is no suitable International Standard, then it may still be of great advantage in trade if a standard is used which is accepted internationally. There are many areas where a national standard, an association standard or even a multinational company standard has gained world-wide recognition and yet there is no suitable International Standard to take its place. In the petrochemical field there are many current examples.

Such standards have earned the status of 'de facto' international standards and if there is no International Standard in existence their use is encouraged but, while having clear advantages in international trade over a less well known national standard or a company standard, they are not as satisfactory as a true International Standard for the following reasons.

(a) The standard may not have been agreed by the consensus of its users. It may embody the ideas of one standards body only, even perhaps of just one manufacturer. It is difficult to take part in the drafting or amendment of someone else's standard and hence there is no mechanism for its development to suit those users who do not belong to the organization originally responsible for it.

(b) A 'de facto' international standard is bound to contain a web of cross-references which relate to an alien national or company standards system. Proper International Standards have a globally agreed system of reference.

7 Taking part in international standardization

Despite their altitude in figure 1, International Standards are not edicts prepared in a rarefied atmosphere by 'international experts'. International Standards, whatever use is made of them later in contract or legislation, are all issued initially as voluntary standards agreed by consensus. In a voluntary system, standards have to be voluntarily prepared by consensus or they would not be accepted or used. That consensus starts in the company but it has to be channelled through the national standards body.

In national standardization, national technical committees, organized by the NSB, decide what standards are needed and determine their content. Those technical committees are comprised of representatives from all the interests in the field of standardization covered. Companies should express their interest by representation. While very large companies may have direct representation, most companies are represented on the national technical committees through membership of a trade association. Therefore for these companies trade associations are an essential link in participating in national standards work.

The national technical committees also take a major part in deciding in what fields of international standardization the NSB shall participate. Once work has started, national input into the international technical committee (ISO or IEC) is channelled through the national technical committee which also appoints the national delegates to the meetings of the international technical committee. Representation at the national level ensures representation at the international level.

The best way of influencing a standard is to help draft it. NSBs and ISO/IEC committees, through their member NSBs, are always looking for volunteers to do just that. Drafts are very rarely prepared by a committee; this is notoriously difficult. They are best written by one person or perhaps in sections by two or three and then criticized by the committee. This applies to International Standards as well as to national standards. Alternatively a company can influence a standard by examining an early draft and proposing constructive amendments. International Standards are subjected nationally through the NSB to the same circulation for comment as national standards. Participation, perhaps through membership of a trade association, is the only way of ensuring that a company gets the International Standards it needs.

Active participation is also helpful in another way. One element in the use of International Standards by companies is a need for knowledge of their background, of the reasons for one solution or requirement having been chosen rather

* BSI.

than another. This knowledge is particularly valuable when deciding whether or not to introduce an International Standard, or for that matter a national standard, into the body of company standards. It is most readily obtained by participation at the national level.

To summarize, you can only make full use of a national or an international standards system if you have devoted the necessary time and trouble to ensuring that its standards meet your needs. This is a hard lesson to learn. It is a two-way system.

ISO and IEC may seem ponderous. National consensus takes some time to achieve and international consensus takes longer. But you can influence the speed with which standards are issued as well as the content. It is generally not the machinery of ISO and IEC that is slow but the action of their technical committees and their members. Your participation will not only help to get the kind of International Standard that is needed; it will help to make sure that it comes out on time.

8 Reference to International Standards

8.1 General

When using International Standards it is essential to identify them clearly as such. In their direct use there is no problem. The number, or if the reference is made to something liable to change, the number and the date of the issue are sufficient, e.g.:

ISO 4092

or, if reference to the dated issue is needed when referring to a particular part of the text

ISO 4092 – 1984

Similarly,

IEC 756

or

IEC 756(1983)

(At present ISO generally uses a dash to indicate the date and IEC uses brackets. These different systems are followed in the examples in this Guide, but the difference is not significant and something that will soon probably be harmonized.)

When using International Standards through national adoption it is useful to identify both the International Standard and the corresponding national standard. Depending on the category of relationship, reference is made as described in **8.2** to **8.4**.

8.2 Identical

Numbering may be carried out by one of the following methods.

(a) The international identification is used in conjunction with the national lettering, e.g.

DIN ISO 4092, Road vehicles – Diagnostic systems for motor vehicles – Vocabulary

(i.e. DIN ISO 4092 ≡ ISO 4092-1984).

(b) The international number is kept separate from the national number, e.g.

BS 6411
IEC 756
Specification for time base stability of non-broadcast video recorders

(i.e. BS 6411 ≡ IEC 756 (1983).)

Method (a), which is used inter alia by DIN, has the advantage that the international number stands out clearly in all references to the standard.

Method (b), which is used inter alia by BSI, has the advantage that, where a national standard is already in existence and is revised to become identical with an International Standard, there is no need to change its national number. It retains its perhaps already well known national identity. This ability to couple or uncouple a national standard to or from an International Standard without changing the identity of the national standard has advantages in regard to the designation of products made to the standard (see clause **9**).

Identical standards are referred to in catalogues in one of the following ways: 'identical', 'idt' or ≡ (see table 1).

8.3 Equivalent

While for the reasons stated in **6.2.3**, dual-identification would be misleading, ISO/IEC Guide 21 Addendum 1 allows mention of the equivalent International Standard on the cover of the national standard, e.g.

BS 6331 : Part 1 : 1983
Mounting dimensions of single rod double acting hydraulic cylinders
Part 1. Specification for 160 bar medium series (eqv. ISO 6020/1) (i.e. BS 6331 : Part 1 = ISO 6020/1-1981.)

Equivalent standards are referred to in catalogues in one of the following ways: 'equivalent', 'eqv' or = (see table 1). An indication of the differences in presentation between the International Standard and the national standard should be found in the latter (see **6.2.3**).

8.4 Not equivalent but related

Again, ISO/IEC Guide 21 Addendum 1 allows mention on the cover, e.g.

BS 6260 : 1982
Specification for open nickel-cadmium prismatic rechargeable single cells (rel. IEC 623)

(i.e. BS 6260 ≠ IEC 623 (1983).)

This indicates that there is a significant relationship between BS 6260 and IEC 623 and therefore that some at least of the requirements of IEC 623 will be met by the British Standard. It follows however that great care should be exercised in identifying these and that it may only be possible to claim that the product conforms to certain identified clauses of the International Standard.

Standards which are not equivalent but related are referred to in catalogues in one of the following ways: 'not equivalent' *or* 'related', 'neq' *or* 'rel', ≠ (see table 1). An explanation of the technical differences between the International Standard and the national standard should be found in the latter (see **6.2.4**).

9 Designation of internationally standardized items

9.1 The system

A system of designation of items specified in International Standards, which has been agreed by both ISO and IEC, is given in the ISO Directives. It provides a standardized pattern of designation from which rapid and unequivocal description of an item can be conveyed in communication. It applies to International Standards and to national standards identical with them.

The system is briefly described in this Guide to indicate how it is used and to help recognition, but it should be emphasized that the designation is no substitute for the full standard. In order to find out the specification of a designated product the standard has to be read.

Where only a single value is specified for each characteristic in the standard, the number of the standard only is quoted. When several values are given there is a choice and the value or values chosen from the range are quoted (see also **9.3**).

The system is suitable for use in automatic data processing (ADP) as well as manual methods of information. Broadly there is a description block and an identity block, the latter divided into the International Standard number block and the individual item block. It is best illustrated by the following examples.

9.2 Examples (taken from Part 2 of the ISO Directives)

9.2.1 Example for the designation of a short enclosed-scale thermometer for precision use according to ISO 656, graduation interval 0,2 °C, main scale 58 °C to 82 °C:

Thermometer ISO 656–EC–0,2–58–82

In this designation the elements have the following meaning.

EC	Short enclosed-scale thermometer
0,2	Graduation interval = 0,2 °C
58–82	The range of the main scale is from 58 °C to 82 °C

NOTE. In this designation the letters 'EC' could be omitted because ISO 656 refers only to short enclosed-scale thermometers.

9.2.2 Example for the designation of a slotted pan head screw with metric thread M5, nominal length 20 mm, according to ISO 1580, tolerance class A, mechanical property class 4,8:

Slotted pan screw ISO 1580–M5 × 20–4,8

This designation refers to the International Standard ISO 1580 which is the standard in which the dimensions of the slotted pan head screws have been fixed and in which reference is made for the other characteristics of these screws to other standards, as follows.

(a) The standard for the tolerances on metric screw thread (ISO 965 in three Parts) in which in turn reference is made to the standards for the basic profile (ISO 68), the general plan (ISO 261) and the gauging (ISO 1502). The element 'M5' of the designation determines which data of these standards are relevant for the designated screw, on the assumption that the relevant screw thread tolerance class is fixed in the standard mentioned under (b).

(b) The standard for the tolerances (ISO 4759/1) on the dimensions and other features of the screws. This standard makes use of the symbols for limits and fits (ISO 286), for tolerances of form and position (ISO 1101), tolerances of screw thread (ISO 965), surface roughness (ISO 468 and others). The relevant tolerance class (class A) is fixed in the standard ISO 1580 for the screw in question. It would be redundant to mention the tolerance class A in the designation because in the standard ISO 1580 only one tolerance class is indicated.

(c) The standard for the mechanical properties of fasteners (ISO 898/1), in which in turn reference is made to standards for tensile test of steel (ISO 82), for hardness tests (ISO 79, ISO 80) and for the impact test (ISO 83). The element '4,8' of the designation is sufficient to determine which data of the standard are relevant.

With the relatively short designation the screw in question is defined completely, although several standards are involved. It should however be noted that the first part of the designation is in plain language and translation may be necessary before computer application.

9.2.3 Example for the designation of the determination of ethyl ether soluble matter in plasticized cellulose acetate, procedure A:

Test method, cellulose acetate ISO 1875–A

9.3 National implementation

9.3.1 When an International Standard has been adopted nationally as identical (see **6.2.2** and **8.2**), the international designation is used without change. However its designation may be extended by inserting the number of the national standard between the description block and the International Standard number block. The following is an example extended from **9.2.2** above.

If the international designation of a screw is:

Slotted pan screw ISO 1580–M5 × 20–4,8

a national designation may be:

Slotted pan screw BS 4183–ISO 1580–M5 × 20–4,8

BS 4183 is the identification of the national standard corresponding to ISO 1580 which has been adopted as identical, i.e. BS 4183 ≡ ISO 1580-1983.

Another possibility for a national designation would be:

Flachkopfschraube mit Schlitz
ÖNORM ISO 1580–M5 × 20–4,8

'ÖNORM ISO 1580' is the identification of the national standard corresponding to ISO 1580 which has been adopted as identical, i.e. ÖNORM ISO 1580 ≡ ISO 1580-1983.

9.3.2 In the case where a national standard is not identical with the International Standard and cannot itself bear a dual identification in accordance with **8.2**, the international designation of any standardized items that *are* identical with items specified in the International Standard may still be used.

10 How to obtain International Standards and associated documents

10.1 International Standards may be obtained from two sources:

(a) the national member body of ISO or IEC (see **10.2**);

(b) directly from the headquarters of ISO or IEC (see **10.3**).

10.2 In the case of ISO standards, the member body of ISO or IEC is the national standards body (NSB). In the case of IEC standards the member body is the national electrotechnical committee. In most countries the latter is combined with the national standards body to whom application should be made. In some countries however the national electrotechnical committee is separately administered. In those countries, IEC International Standards should be ordered from the national electrotechnical committee.

Guides and other publications issued by ISO and IEC are obtained respectively in the same way as their standards. ISO/IEC guides and other jointly issued documents are obtained from either source.

With few exceptions, the national standards body is accredited by ISO as its agent for the sale of all ISO publications in its own country. A list of the addresses is given in the ISO Catalogue and the ISO Memento, issued and available annually. An updated list of the ISO sales agents is included in the ISO Bulletin (monthly). This is the normal method of ordering ISO International Standards and other publications such as Guides.

The IEC national committees act in a similar way as the agents for IEC International Standards and other publications. Their addresses are given in the IEC Catalogue, also issued annually and, as mentioned above, the address of both the ISO and the IEC agent may be the same.

10.3 International organizations and people in countries where there is no ISO or IEC member body should obtain International Standards from the headquarters of the international standards organizations. If difficulty is found in obtaining them in a country in which there is an agency then application should also be made to the headquarters. Their addresses are as follows:

ISO
Sales Department
ISO Central Secretariat
1, rue de Varembé
Case Postale 56
CH-1211 Genève 20
Switzerland

Tel: (nat) (022) 34 12 40
(int) + 41 22 34 12 40
Telegrams: ISORGANIZ
Telex: 23 88 7 iso ch
Telefax: + 41 22 33 34 30

IEC
Sales Department
IEC Central Office
3, rue de Varembé
CH-1211 Genève 20
Switzerland

Tel: (nat) (022) 34 01 50
(int) + 41 22 34 01 50
Telegram: INELISSION GENEVE
Telex: 28872 ceiec ch

10.4 Purchase through member bodies is in the normal way. The larger ones keep a stock and it is normally quicker. Any privileges of subscribing membership may be available in the purchase of International Standards as well as in the purchase of national standards. Multinational companies can obtain International Standards through the member body of any country in which they operate.

In those countries which operate the ISO/IEC classification system of relationship with International Standards and national standards it is sufficient, as long as the national standard is classified as identical ('idt' or ≡), to obtain the identical national standard only from the appropriate national member body. This may then be used instead of the International Standard.

11 Information on International Standards

11.1 General

As with the matter of obtaining standards, information on International Standards and related documents should be obtained from the national member body or, if there is no member body, from the headquarters of ISO or IEC. The basic source of information in each case is the annual Catalogue and its supplements.

11.2 ISO

The Catalogue lists among other material the following.

(a) Member bodies and their addresses. This includes an indication of whether or not they act as an agent for obtaining ISO International Standards.

(b) ISO International Standards. These are presented both in numerical order and in subject grouping and an indication is given of the ISO technical committee responsible for each standard; e.g.

ISO 4638-1984
Polymeric materials, cellular flexible – Determination of air flow permeability (under TC 45 Rubber and rubber products)

(c) Guides. Reference has been made earlier to some of these Guides. They are issued primarily to give advice and to obtain common practice between NSBs and are compiled by working groups of experts drawn from the member bodies under the control of ISO Council. The Guides, most of which are issued jointly with IEC, contain information which is useful to companies both

in indicating what can and should be expected of their NSB and in containing advice on standards matters in general; e.g.

ISO Guide 27 Guidelines for corrective action to be taken by a certification body in the event of misuse of the mark of conformity (1983)

ISO/IEC Guide 3 Identification of national standards that are equivalent to International Standards (1981)

(d) Bibliographies. Lists of all ISO International Standards and Draft International Standards (DIS) in a given field and, where appropriate, a selection of relevant documents produced by other international organizations.

(e) Standards Handbooks. As an easy means for referring to International Standards and in order to reach a wider audience, ISO publishes a number of Handbooks, each of which reproduces the full text of ISO standards in a given field in an A5 size book; e.g.

Handbook 2 — Units of measurement

(f) Other ISO publications. Among those listed the following are particularly useful.

(1) *KWIC Index of International Standards.* This is a single, comprehensive reference source that helps to identify all existing International Standards for a given subject. It is given in the format 'key word-in-context' (KWIC). The 1985 edition lists some 9000 standards produced by 29 international standardizing bodies (see also **11.4**).

(2) *ISO Memento.* Information on the field of activity, organizational structure and secretariats for each ISO technical committee and general information on the organization and administration of the work of ISO.

(3) *Directives* (for the technical work of ISO). These contain instructions on the preparation of International Standards and related work.

(4) *Technical programme.* Source of information for standardization work in progress.

11.3 IEC

The Catalogue lists the following:

(a) International Standards (referred to as IEC Publications). These are presented in numerical order with an abstract and an indication of the technical committee responsible. e.g.

IEC 784 (1984). Instrumentation of electric road vehicles — TC 69

(b) International Special Committee on Radio Interference (CISPR) Publications. International Standards on this specialist subject. e.g.

CISPR 18. Radio interference characteristics of overhead power lines and high voltage equipment — CISPR 18-1 (1982) Part 1: Description of phenomena

(c) IEC Quality Assessment system for electronic components (IECQ) Rules and Specifications (see **12.4.2**). Standards are listed in numerical order with an indication of the technical committee responsible. e.g.

QC 440000 (1982). Directly heated positive step-function temperature coefficient thermistors. Part 1: Generic specification TC 40

(d) IEC Guides and ISO/IEC Guides. Advisory documents, mostly issued jointly with ISO. e.g.

IEC Guide 103 (1980) Guide on dimensional co-ordination

ISO/IEC Guide 21 (1981) Adoption of International Standards in national standards

(e) Other IEC Publications. Among those listed the following are particularly useful:

(1) Annual Directory (répertoire). This gives details of the Council and council committees and of all IEC technical committees and sub-committees.

(2) General Directives for the Work of the IEC. Gives the general rules for the organization of work within IEC technical committees and sub-committees.

11.4 Other international standardizing bodies

While ISO and IEC are international standards organizations whose principal function is the preparation and issue of standards, a number of other international bodies also produce international standards (see clause **2** and appendix A). These are listed in the ISO KWIC Index (see **11.2**(f)). See also *ISO Directory of international standardizing bodies.*

12 International Standards and quality assurance

12.1 General

The international standards organizations ISO and IEC have recognized the essential link between standards and quality assurance and are contributing, through the efforts of their members, by the production of International Standards which can be used either directly or through the process of national adoption and by the development of world recognized methods of certification. While International Standards already cover diverse and enormous fields of industry, international certification is still in its infancy but already IEC has developed a system covering electronic components (IECQ) and ISO, through its Conformity Assessment Committee (ISO/CASCO) is developing guidelines for a more general system, in cooperation with IEC. Developments are as follows.

12.2 ISO/IEC Guides

ISO and IEC have achieved a good measure of international agreement through the activities of the ISO Committee on Conformity Assessment (ISO/CASCO), formerly known as

the ISO Committee on Certification (ISO/CERTICO), in which both participate, and which comprises at present 34 participating countries and 26 observer countries; a total of 60. The guides which have been produced are listed below. Some of these may be found to be of particular interest to companies. They are used in an increasing number of both industrial and developing countries. Intended mainly as guidance for national standards bodies and national certification authorities, they have an important role in international trade and hence they give a very good idea of what is generally expected in trade with other countries. In particular cases the rules and procedures in individual countries should always be checked.

ISO/IEC Guide 2 General terms and their definitions concerning standardization, certification and testing laboratory accreditation – Section 2 'certification', 1983

ISO/IEC Guide 7 Requirements for standards suitable for product certification, 1982

ISO/IEC Guide 16 Code of principles on third-party certification systems and related standards 1978

ISO/IEC Guide 22 Information on manufacturer's declaration of conformity with standards or other technical specifications, 1982

ISO/IEC Guide 23 Methods of indicating conformity with standards for third-party certification systems, 1982

ISO/IEC Guide 25 General requirements for the technical competence of testing laboratories

ISO/IEC Guide 27 Guidelines for corrective action to be taken by a certification body in the event of misuse of its mark of conformity, 1983

ISO/IEC Guide 28 General rules for a model third-party certification system for products, 1982

ISO/IEC Guide 38 General requirements for the acceptance of testing laboratories, 1983

ISO/IEC Guide 39 General requirements for the acceptance of inspection bodies, 1983

ISO/IEC Guide 40 General requirements for the acceptance of certification bodies, 1983

ISO/IEC Guide 42 Guidelines for a step-by-step approach to an international certification system, 1984

ISO/IEC Guide 43 Development and operation of laboratory proficiency testing, 1984

ISO/IEC Guide 44 General rules for ISO or IEC international third-party certification schemes for products, 1985

ISO/IEC Guide 45 Guidelines for the presentation of test results, 1985

In addition the following books may be found helpful and can be obtained in the same way as other ISO Publications.

ISO Book 'Marks of conformity with standards', 1984

ISO/ITC Book 'Certification/Principles and Practice' (issued jointly by ISO and the International Trade Centre UNCTAD/GATT), 1980

12.3 Quality management standards

Further efforts by ISO and IEC to break down barriers have resulted in the production of standards on quality management which can be used internationally to assess the capability of firms all over the world. The growing demand for the application of quality assurance principles to contracts and for the assessment of suppliers' quality management systems led initially to a variety of quality assurance requirements for various purchasing and third-party organizations. This proliferation highlighted the need for standardizing these requirements and increasing use is being made of standards which cover the whole subject of quality assurance itself. These are issued by a number of national standards bodies both as guidance to manufacturers, service industries, etc., on how to run a quality assurance system and as standards which provide criteria against which the quality capability of a company may be assessed. ISO, with help from IEC, has now produced a series of international standards on quality management which are intended to be used internationally to assess the capability of firms all over the world.

ISO 8402* Quality assurance – Vocabulary

ISO 9000* Quality management and quality assurance standards – Guidelines for selection and use

ISO 9001* Quality systems – Model for quality assurance in design

ISO 9002* Quality systems – Model for quality assurance in production and installation

ISO 9003* Quality systems – Model for quality assurance in final inspection and test

ISO 9004* Quality management and quality system elements – Guidelines

ISO 9001, 9002 and 9003 form sets of criteria against which companies may be independently assessed. Their adoption world-wide will be of the greatest benefit in assessing quality capability in international trade.

12.4 International certification schemes

12.4.1 *General.* There are already two important international certification schemes in being:

(a) The IEC Quality Assessment System for Electronic Components (IECQ) (see **12.4.2**); and

(b) The IEC System for Conformity Testing to Standards for Safety of Electrical Equipment (IECEE) (see **12.4.3**).

* To be issued shortly.

12.4.2 *IECQ.* The object of the IECQ, which is fully in operation, is to facilitate trade, both national and international, by providing for the supply of electronic components of assessed quality which are made and handled by approved manufacturers and distributors, and which buyers can confidently use without further testing. The specifications against which components are approved under the IECQ are part of an overall structure based on IEC standards (see **11.3**(b)).

12.4.3 *IECEE.* The IEC System for Conformity Testing to Standards for Safety of Electrical Equipment (IECEE) is intended to facilitate international trade in electrical equipment normally used in homes, offices, workshops and similar locations through the operation and maintenance of a scheme for the recognition of test results indicating that one or more specimens of certain electrical equipment were tested and found to be in conformity with the specific standards, primarily with regard to safety. This scheme is called 'Scheme for the IECEE for Recognition of Results of Testing to Standards for Safety of Electrical Equipment (CB Scheme)'.

12.4.4 *The future.* It is envisaged that more international certification schemes will be developed and that ISONET, the ISO information system to which many NSBs are linked, will eventually contain details of national and international standards and certification schemes. It is possible that it could even be developed to contain details of companies certified as meeting the international quality systems standard concerned.

Appendices

Appendix A. International and regional bodies concerned with standardization

NOTE. The initials and titles given are those used in English-speaking countries; the French abbreviations, where different, are given in parentheses. This list is not intended to be exhaustive and does not include the many trading and manufacturing associations which may be involved in various degrees in international standardization.

A.1 International standards organizations

ISO

International Organization for Standardization. Founded 1947. Comprises national standards bodies of 75 countries and 16 correspondent members. Issues standards based on approval by 75 % voting member bodies. Over 160 technical committees, over 650 sub-committees, over 1500 working groups.

ISO Council Committees

Executive Board (formerly EXCO) Includes responsibility for finance

Technical Board (formerly PLACO)

STACO	Committee on Standardization Principles
CASCO	Committee on Conformity Assessment
DEVCO	Development Committee. Aimed at the needs of developing countries
INFCO	Committee on Information
REMCO	Committee on Reference Materials
COPOLCO	Committee on Consumer Policy

IEC

International Electrotechnical Commission (CEI). Founded 1906. The electrotechnical counterpart of ISO. Comprises national electrotechnical committees of over 40 countries. Issues standards and reports, approved if not more than 20 % of national committees cast a negative vote. Over 75 technical committees, over 115 subcommittees.

IEC special committee

CISPR International Special Committee on Radio Interference. Set up under the aegis of IEC member committees and other international organizations in the electrical, broadcasting and transport fields and operated by IEC.

A.2 Regional standards organizations

ARSO

African Regional Organizations for Standardization. Set up in January 1977 under ECA (see below) auspices. Membership open to the national standards bodies of African countries who are members of ECA and Organization of African Unity.

ASMO

Arab Organization for Standardization and Metrology. Set up in 1965 to serve as a specialized technical body for the League of Arab States in the fields of standardization, metrology and quality control.

CEN

European Committee for Standardization. Founded 1961. Comprises national standards bodies of 16 EEC and EFTA countries. Prepares European Standards (EN) which, if accepted, are published without variation of text as the national standard in the countries approving them. Also issues Harmonization Documents (HD). About 65 technical committees. CENCER is CEN's certification body.

CENELEC

European Committee for Electrotechnical Standardization. Electrotechnical counterpart of CEN. Founded in 1973 from union of CENEL and CENELCOM. Comprises national electrotechnical committees of 17 West European countries. 27 technical committees and 9 sub-committees. Issues European Standards (EN) and Harmonization Documents (HD) and cooperates closely with CEN.

CECC CENELEC Electronic Components Committee. European system to facilitate international trade by harmonization of specifications and quality assessment procedures for electronic components, and by the granting of an internationally recognized mark and/or certificate of conformity. Founded 1970. Comprises national electrotechnical committees of 15 West European countries.

COPANT

Pan American Standards Commission. Founded 1961. Comprises national standards bodies of USA and 11 Latin American countries. A co-ordinating organization concerned with the regional implementation of ISO and IEC standards and recommendations.

INSTA

Internordic Standards are issued in Denmark, Finland, Iceland, Norway and Sweden.

PASC

Pacific Area Standards Congress. Set up in 1973 to help the Pacific countries participate in international standards activities and promote closer co-operation between its members.

A.3 International intergovernmental organizations

CGPM

General Conference of Weights and Measures. Membership drawn from those 41 nations who are signatories to the Metre Convention. The Conference meets at approximately four-yearly intervals. Responsible for implementing decisions of CGPM and preparing for each Conference is the International Committee of Weights and Measures (CIPM). The International Bureau of Weights and Measures (BIPM), a metrological laboratory, under the responsibility of the CIPM, can arrange for the measurement standards of any country to be compared with internationally agreed standards.

OECD

Organization for Economic Co-operation and Development (OCDE). Founded 1961. Comprises West European countries, USA, Canada and Japan.

OIML

International Organization for Legal Metrology. Set up in 1955 to resolve the technical and administrative problems of legal metrology raised by the construction, use and checking of instruments of measurement and to facilitate co-operation between states in this field. 42 member states.

UN (United Nations) Agencies

ECE	Economic Commission for Europe (CEE, Genève). Acts to facilitate trade in Europe and notably prepares regulations associated with 'E' mark certification scheme (now operating for motor vehicle equipment)
ESCAP	Economic and Social Commission for Asia and the Pacific (formerly ECAFE)
ECLA	Economic Commission for Latin America (CEPAL)
ECA	Economic Commission for Africa (CEA)
FAO	Food and Agriculture Organization
GATT	General Agreement on Tariffs and Trade
IAEA	International Atomic Energy Agency (AIEA)
ILO	International Labour Organization (OIT)
IMO	International Maritime Organization (OMI)
ITU	International Telecommunications Union (UIT)
UNCTAD	UN Conference on Trade and Development (CNUCED)
UNESCO	UN Educational, Scientific and Cultural Organization
UNIDO	UN Industrial Development Organization (ONUDI)
WHO	World Health Organization (OMS)
WMO	World Meteorological Organization (OMM)
CODEX	Codex Alimentarius Commission. Created to implement the joint FAO–WHO Food Standards Programme

A.4 Regional intergovernmental organizations

EEC

European Economic Community (CEE). The 'Common Market' was founded by the Treaty of Rome, 1957. Membership: Belgium, Denmark, France, West Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, United Kingdom.

ECSC

European Coal and Steel Community (CECA). Founded by the Paris Treaty, 1951.

EURATOM

European Atomic Energy Community. Founded by a second Rome Treaty, 1957.

EFTA

European Free Trade Association (AELE). Membership: Austria, Norway, Sweden, Switzerland, Iceland and Finland.

CMEA

Council for Mutual Economic Assistance. Founded 1949, with the current membership of the USSR and East European countries together with Cuba, Vietnam and Mongolia. Amongst other economic tasks promotes co-ordination between the national standards bodies and assists in the production of common or harmonized standards. Although an intergovernmental organization, some of its functions are parallel to CEN/CENELEC (see **A.2**)

Appendix B. Abbreviated designations for international, regional and national standards

The following list is a key to the country or organization of origin. It is intended as a general guide and is not therefore comprehensive. Not all the standards listed are issued by the national standards body or the national electrotechnical committee. The object is to indicate the country of origin.

ABNT	Brazil
AISI	USA
ANSI	USA
API	USA
AS	Australia
ASME	USA
AWS	USA
BDS	Bulgaria
BDSS	Bangladesh
BNS	Barbados
BS	United Kingdom
BST	Sweden
CAN	Canada
CAS	Central Africa
CECC	Regional (EEC & EFTA)
CEE	International (IEC)
CEI*	Italy
CEMA	Canada
CGA	Canada
CGSB	Canada
CISPR	International (IEC)
CKS	South Africa
CNS	Taiwan
COPANT	Pan America
COVENIN	Venezuela
CRS	Costa Rica
CSA	Canada
CSN	Czechoslovakia
CUNA	Italy
CYS	Cyprus
DEMKO	Denmark
DGN	Mexico
DGNT	Bolivia
DIN	Federal Republic of Germany
DS	Denmark
ELOT	Greece
EN	CEN/CENELEC
ES	Ethiopia
ES	Arab Republic of Egypt
EURONORM	European (ECSC)
GB	China
GOST	USSR
GS	Ghana
HD	CEN/CENELEC
ICAITI	Central America
ICONTEC	Colombia
IEC	International
IEEE	USA
INANTIC	Peru
INDITECNOR	Chile
INEN	Ecuador
IOS	Iraq
IRAM	Argentina
IRS	India
IS	India
I.S.	Eire
ISIRI	Iran
ISO	International (ISO)
IST	Iceland
ITINTEC	Peru
JIS	Japan
JS	Jamaica
JSS	Jordan
JUS	Yugoslavia
KBS	Kenya
KEMA	Netherlands
KS	South Korea
K.S.	Kenya
KSS	Kuwait
LS	Lebanon
LSS	Libya
MBS	Malawi
MI	Hungary
MNC	Sweden
MS	Malaysia
MSZ	Hungary
NBN	Belgium
NBS	USA
NC	Cuba
NCH	Chile
NEK	Norway
NEMA	USA
NEN	Netherlands
NF	France
NI	Indonesia
NIS	Nigeria
NM	Morocco
NORDON	Dominican Republic
NORVEN	Venezuela
NP	Netherlands
NPR	Netherlands
NS	Norway
NZS	New Zealand
ÖNORM	Austria
OS	Oman
ÖVE	Austria
PN	Poland
PS	Philippines
P.S.	Pakistan
SABS	South Africa
SAE	USA
SAS	Saudi Arabia
SEN†	Sweden
SEV	Switzerland
SFS	Finland
SI	Israel
SIS†	Sweden
SLS	Sri Lanka
SMS†	Sweden
SN	Switzerland
SNS	Syria
SS	Singapore
SS	Sweden
S.S.	Sudan
SSA	Saudi Arabia
SSS	Syria
STAS	Rumania
TCVN	Vietnam
TGL	German Democratic Republic
TIS	Thailand
TS	Turkey
TTS	Trinidad and Tobago
TZS	Tanzania
UL	USA
ULC	Canada
UNE	Spain
UNEL	Italy
UNI	Italy
UNIT	Uruguay
UTE	France
VDE	Federal Republic of Germany
VIS	Sweden
VSM	Switzerland
ZS	Zambia

* CEI is also the French abbreviation for IEC International Standards.

† All standards produced by the Swedish national standards body are now designated SS, although these abbreviations are still to be seen on existing standards.

Appendix C. IFAN

The International Federation for the Application of Standards (IFAN) is an association representative of the national organizations concerned with the application of standards. It was founded in 1974 and its present membership is as follows:

Austria	Arbeitgemeinschaft Normenpraxis im ON (AGN)
Belgium	Comité Belge de la Normalisation d'Enterprise
Denmark	Standardiseringsteknisk Forening (STAFO)
Finland	Suomen Laatuyhdistys (SLY)
France	Association des Cadres de Normalisation (ACANOR)
Germany FR	Ausschuss Normenpraxis (ANP) im DIN e.V.
India	Institute of Standards Engineers
Netherlands	Comité voor Bedrijfsnormalisatie (COBENO)
Norway	Standardiseringsforeningen
Portugal	Associacao Portuguesa para Qualidade Industrial (APQI)
Sweden	Standardiseringstekniska Föreningen (STANTEK)
Switzerland	Schweizerischer Ausschuss Normenpraxis (NOP)
United Kingdom	British Standards Society (BSS)
United States of America	Standards Engineering Society (SES)
Yugoslavia	Savez Drustava za Unapredjenje Standardizacije Jugoslavije (SADUS)

IFAN was established to provide an international forum for the exchange of ideas on and experiences of standardization and it has close links with the international standards organizations. It operates through its Members' Assembly and practical work on topics of interest to standards practitioners is carried out through working groups established to study particular subjects. The results of the studies and other subjects of interest to those concerned with standards are presented to an international conference on standardization organized by IFAN and held every three years.

The Federation is managed by a board consisting of the President, two Vice-Presidents and the Secretary. Further information about IFAN can be obtained from the Secretary*.

* IFAN Secretariat, International Organization for Standardization (ISO), 1 rue de Varembé, PO Box 56 CH-1211 Geneva 20.

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