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SARSO Directives Part 2

SARSO Directives Part 2 — Rules for the structure and drafting of SAARC Standards



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Foreword

The SARSO Directives are published in two parts:

- Part 1 : Procedures for the technical work;
- Part 2 : Rules for the structure and drafting of SAARC Standards.

These have been approved by the Governing Board (GB) and the Technical Management Board (TMB) of the South Asian Regional Standards Organization (SARSO).

This part provides rules for the structure and drafting of documents intended to be developed into SAARC Standards on any subject which has regional/sub-regional interest to be made available to the SAARC Member States.

These rules have been developed by SARSO in recognition of the need for SAARC Standards (SARS) to promote and undertake harmonization of National Standards of the SAARC Member States with a view to removing the technical barriers to trade and facilitate flow of goods and services in the region and to encourage use of International Standards published by international organizations, such as ISO, by way of adoption, where appropriate, as SAARC Standards.

The objective of these rules is to ensure uniformity in the style and presentation and to develop a standard practice in the drafting of SAARC Standards published by the South Asian Regional Standards Organization (SARSO).

These rules are based on the following publications of the International Organization for Standardization (ISO) and Bureau of Indian Standards (BIS):

ISO/IEC Directives, Part 2, 6th edition 2011
Rules for the structure and drafting of International Standards.

IS 12:2005
Guide for drafting and presentation of Indian Standards.

Rules for the structure and drafting of SAARC Standards

1 Scope

This part of the SARSO Directives specifies rules for the structure and drafting of documents intended to become SAARC Standards.

The rules are intended to ensure that such documents, prepared by the Sectoral Technical Committees (STCs) of the South Asian Regional Standards Organization (SARSO) are drafted in as uniform manner as practicable, irrespective of the technical content.

It also gives some guidance with regard to presentation.

It does not specify the typography and layout of published documents which will be determined by the SARSO Secretariat.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 690, *Information and documentation – Guidelines for bibliographic references and citations to information resources*

ISO 80000 (all parts), Quantities and units

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Document type

3.1.1 Document

Information in the form of record, specification, procedure, drawing, report, Standard etc. and its supporting medium, intended to become SAARC Standard.

3.1.2 Standard

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, aimed at the achievement of the optimum degree of order in a given context.

NOTE: Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits.

3.1.3 SAARC Standard (SARS)

Standard that is adopted by South Asian Regional Standards Organization (SARSO) and made available to the SAARC Member States.

3.1.4 International Standard

Standard that is adopted by an International Standardizing/Standards Organization and made available to the public.

3.1.5**Regional Standard**

Standard that is adopted by a regional Standardizing/Standards Organization and made available to the public.

3.1.6**National Standard**

Standard that is adopted by National Standards Body of SAARC Member states and made available to the public.

3.1.7**Technical specification (TS)**

Document published by SARSO for which there is the future possibility of agreement on a SAARC Standard, but for which at present

- the required support for approval as a SAARC Standard cannot be obtained,
- there is doubt on whether consensus has been achieved,
- the subject matter is still under technical development, or there is another reason precluding immediate publication as a SAARC Standard

NOTE 1: The content of a Technical Specification, including its annexes, may include requirements.

NOTE 2: A Technical Specification is not allowed to conflict with an existing SAARC Standard.

NOTE 3: Competing Technical Specifications on the same subject are permitted.

3.1.8**Technical report (TR)**

Document published by SARSO containing collected data of a different kind from that which is normally published as a SAARC Standard or Technical Specification.

NOTE: Such data may include, for example, data obtained from a survey carried out among the SAARC Member bodies, data on work in other regional/international organizations or data on the "state of the art" in relation to Standards of SAARC Member bodies on a particular subject.

3.1.9**Guide**

Document published by SARSO giving rules, orientation, advice or recommendations relating to SAARC regional Standardization.

NOTE: Guides can address issues of interest to all users of documents published by SARSO.

3.1.10**Publicly available specification (PAS)**

Document published by SARSO to respond to an urgent market need, representing either

- a) a consensus in an organization external to SARSO, or
- b) a consensus of the experts within a working group

NOTE 1: A Publicly Available Specification is not allowed to conflict with an existing SAARC Standard.

NOTE 2: Competing Publicly Available Specifications on the same subject are permitted.

3.2 Element

3.2.1 Normative element

Element that describes the scope of the document or sets out provisions.

3.2.2 Informative element

Element that identifies the document, introduces its content and explains its background, its development and its relationship with other documents.

3.2.3 Mandatory element

Element the presence of which in a document is obligatory.

3.2.4 Conditional element

Element the presence of which in a document is dependent on the provisions of the particular document.

3.3 Provision

3.3.1 Requirement

Expression in the content of a document conveying criteria to be fulfilled if compliance with the document is to be claimed and from which no deviation is permitted.

NOTE 1: The verbal forms “shall” and “shall not” shall be used to indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted.

NOTE 2: The form “must” shall not be used as an alternative for “shall”

NOTE 3: The form “may not” shall not be used instead of “shall not” to express a prohibition.

3.3.2 Recommendation

Expression in the content of a document conveying that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.

NOTE: The verbal forms “should” and “should not” shall be used to indicate the intent.

3.3.3 Statement

Expression in the content of a document conveying information.

NOTE 1: The verbal forms “may” and “need not” shall be used to indicate a course of action permissible within the limits of the document. The verbal forms “can” and “cannot” shall be used for statements of possibility and capability, whether material, physical or casual

NOTE 2: The verbal forms “can” “shall not be used instead of “may” in the context of permission. May” signifies permission expressed by the document, whereas “can” refers to the ability of a user of the document or to a possibility open to him/ her.

3.3.4**State of the art**

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.

4 General principles**4.1 Objective**

The objective of documents published by SARSO is to define clear and unambiguous provisions in order to develop harmonized Standards for the SAARC region to facilitate intra-regional trade and to have access in the global market. To achieve this objective, the document shall

- be as complete as necessary within the limits specified by its scope,
- be consistent, clear and accurate,
- take full account of the state of the art (see 3.3.4),
- provide a framework for future technological development,
- be comprehensible to qualified persons who have not participated in its preparation, and
- take into account the principles for the drafting of documents (see Annex A).

4.2 Performance approach

Whenever possible, requirements shall be expressed in terms of performance rather than design or descriptive characteristics. Primarily those characteristics shall be included that are suitable for SAARC regional acceptance.

4.3 Homogeneity

Uniformity of structure, of style and of terminology shall be maintained not only within each document, but also within a series of associated documents. The structure of associated documents and the numbering of their clauses shall, as far as possible, be identical.

The same term shall be used throughout each document or series of associated documents to designate a given concept.

4.4 Consistency of documents

In order to achieve the aim of consistency within the complete corpus of documents published by SARSO, the text of every document shall be in accordance with the relevant provisions of existing basic documents published by the SAARC Member States. This relates particularly to

- Standardized terminology,
- principles and methods of terminology,
- quantities, units and their symbols,
- abbreviated terms,
- bibliographic references,
- technical drawings and diagrams,
- technical documentation, and
- graphical symbols, public information symbols and safety signs.

4.5 Fitness for implementation as a national Standard

The content of a document published by SARSO shall be drawn up in such a way as to facilitate its direct application and its adoption without change by the SAARC Member States as a national Standard.

4.6 Planning

Rules for the planning of new work item proposals are given in the SARSO Directives Part -1. The rules given in the SARSO Directives shall be applied from the very beginning of the work and throughout all subsequent stages to ensure the timely publication of a document and avoid delay at any stage.

5 Structure of a SAARC Standard

5.1 Division and subdivision of the subject matter

5.1.1 General

Documents are so diverse that no universally acceptable rules can be established for the subdivision of the subject matter. However, as a general rule, an individual document shall be prepared for each subject to be standardized, and published as a complete entity.

5.1.2 Part

The document may be published into separate parts under the same SARS number for specific cases and for practical reasons, for example, if

- a) the document is likely to become too voluminous,
- b) subsequent portions of the content are interlinked,
- c) portions of the document could be referred to in regulations, or
- d) portions of the document are intended to serve for certification purposes,

Each part deals with a specific aspect of the subject and can stand alone.

EXAMPLE 1:

- Part 1: Vocabulary
- Part 2: Requirements
- Part 3: Test methods
- Part 4: ...

There may be both common and specific aspects to the subject. The common aspects shall be given in Part 1. Specific aspects (which may modify or supplement the common aspects and therefore cannot stand alone) shall be given in individual parts.

EXAMPLE 2:

- Part 1: General requirements
- Part 2: Thermal requirements
- Part 3: Air purity requirements
- Part 4: Acoustical requirements

Each part shall carry the part number to be indicated by Arabic numerals, beginning with 1, following the document number and preceded by a hyphen; for example,

9999 (Part 1), 9999 (Part 2), etc.

5.1.2.1 Title shall be given for each part and shall be composed in the same way as that of a document as described in 5.1.1. The designation “Part” should not normally be used as an internal subdivision of a Standard. All the individual titles in a series of parts shall contain the same introductory element (if present) and main element, while the complementary element shall be different in each case in order to distinguish the parts from one another. The complementary element shall be preceded in each case by the designation “Part”.

5.1.2.2 If a document is published in the form of a number of separate parts, the first part shall include in its foreword (see 6.3) an explanation of the intended structure. In the foreword of each part belonging to the series, a reference shall be made to the titles of all other parts that have been or are planned to be published.

5.1.3 Section

5.1.3.1 A section may either be a portion of a part of a Standard, of more limited scope than the part, or an internal subdivision of a Standard.

5.1.3.2 In cases where the section is a separately published portion of a part of a Standard, each publication should carry the part number and the section number in numerals in both the designation and the title. It is also necessary to give a separate subtitle for each section below the subtitle of the part.

EXAMPLE: IS 302 Safety of household and similar electrical appliances

(Part 1):2008	General Requirements
(Part 2:1997)	Particular requirements
(Part 2/Sec 2:1997)	Vacuum cleaners
(Part 2/Sec 3:2007)	Electric iron
(Part 2/Sec 4:1993)	Spin extractors

5.1.3.3 A section may also be an internal subdivision used to group a series of clauses to indicate a special relationship between the clauses grouped in this way. Each section shall have a subtitle. Items in a Standard containing sections shall be numbered sequentially irrespective of the subdivision into sections.

EXAMPLE: IS 694:2010 Polyvinyl Chloride Insulated Unsheathed And Sheathed Cables/Cords With Rigid And Flexible Conductor For Rated Voltages Up To And Including 450/750 V (Fourth Revision)

SECTION 1	General Requirements
SECTION 2	Single Core Cables/Cords for Fixed and Flexible Wiring

5.2 Subdivision of the subject matter within an individual document

5.2.1 Clause

A clause is the basic component in the subdivision of the content of a document. The clauses in each document or part shall be numbered with Arabic numerals, beginning with 1 for the “Scope” clause. The numbering shall be continuous up to but excluding any annexes (see 6.15).

Each clause shall have a title, placed immediately after its number, on a line separate from the text that follows it.

5.2.2 Subclause

A subclause is a numbered subdivision of a clause. A primary subclause (e.g. 5.1, 5.2, etc.) may be subdivided into secondary subclauses (e.g. 5.1.1, 5.1.2, etc.), and this process of subdivision may be continued as far as the fourth level (e.g. 5.1.1.1.1., 5.1.1.1.2, etc.).

Subclauses shall be numbered with Arabic numerals.

A subclause shall not be created unless there is at least one further subclause at the same level.

For example, text in Clause 10 shall not be designated subclause “10.1” unless there is also a subclause “10.2”.

Each primary subclause should preferably be given a title, which shall be placed immediately after its number, on a line separate from the text that follows it. Secondary subclauses may be treated in the same way. Within a clause or subclause, the use of titles shall be uniform for subclauses at the same level, e.g. if 10.1 has a title, 10.2 shall also have a title. In the absence of titles, key terms or phrases (composed in distinctive type) appearing at the beginning of the text of the subclause may be used to call attention to the subject matter dealt with. Such terms or phrases shall not be listed in the table of contents.

5.2.3 Paragraph

A paragraph is an unnumbered subdivision of a clause or subclause.

Subdivisions into paragraphs should be avoided since reference to them is ambiguous. Paragraphs shall not have indents.

5.2.4 Lists (Itemization)

Lists should be introduced by a sentence, a complete grammatical proposition followed by a colon, or by the first part of a proposition (without a colon), completed by the items in the list.

Each item in a list shall be preceded by a lower case letter followed by a parenthesis [a), b), c), ...]. If it is necessary to further subdivide an item in the latter type of list, Arabic numerals followed by a parenthesis shall be used [1), 2), ..] (see Example 1). For still further subdivision i), ii), iii),shall be used.

EXAMPLE 1 The following basic principles shall apply to the drafting of definitions.

a) The definition shall have the same grammatical form as the term:

- 1) to define a verb, a verbal phrase shall be used;
- 2) to define a singular noun, the singular shall be used.

b) The preferred structure of a definition is a basic part stating the class to which the concept belongs, and another part enumerating the characteristics that distinguish the concept from other members of the class.

5.3 Designation

The terms which shall be used to designate the divisions and subdivisions that a document may have are shown in Table 1

Table 1 - Names of divisions

Division	Example of numbering
Part	9999 (Part 1)
Clause	1
Subclause	1.1
Sub-subclause	1.1.1
Paragraph	[no number]
Annex	A
Clause of Annex	A-1
Subclause of Annex	A-1.1

5.4 Elements of a SAARC Standard

The elements that together form a document may be classified by their normative or informative nature and their position within the structure.

A typical arrangement of elements in a Standard is given below:

Title page	(Mandatory and Informative)
Table of contents	(Conditional and Informative)
Foreword	(Mandatory and Informative)
Introduction	(Conditional and Informative)
Title	(Mandatory and Normative)
Scope	(Mandatory and Normative)
Normative references	(Conditional and Normative)
Terms and definitions	(Conditional and Normative)
Symbols and abbreviated terms	(Conditional and Normative)
Text	(Mandatory and Normative)
Classification/Manufacture/ Requirements/Sampling/ Marking/Labelling/ Packaging etc.	{ (Conditional and Normative)
Annex	
Bibliography	
Indexes	

A document may also contain notes and footnotes to figures and tables (see 7.4.8, 7.4.9, 7.5.5, 7.5.6).

6 Drafting

6.1 Title page

The title page shall contain the title of the document.

The wording of the title shall be established with the greatest care; while being as concise as possible, it shall indicate, without ambiguity, the subject matter of the document in such a way as to distinguish it from that of other documents, without going into unnecessary detail. Any necessary additional particulars shall be given in the scope.

The title shall be composed of separate elements, each as short as possible, proceeding from the general to the particular. In general, not more than the following three elements shall be used:

- an *introductory element* (optional/conditional) indicating the general field to which the document belongs (this can often be based on the title of the STC which prepared the document);
- a *main element* (mandatory) indicating the principal subject treated within that general field;
- a *complementary element* (conditional) indicating the particular aspect of the principal subject or giving details that distinguish the document from other documents/SAARC Standards, or other parts of the same document/SAARC Standard.

6.2 Table of contents

The table of contents is a conditional element, but it is necessary if it makes easier to consult the document. The table of contents should list, as appropriate, sections; clauses; subclauses; annexes; tables and figures, with the titles in the same sequence as given in the text; bibliography; index. Subdivisions beyond the clause level should preferably not be included in the table of contents of a Standard.

6.3 Foreword

The foreword shall appear in each document. It shall not contain requirements, recommendations, figures or tables.

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It consists of a general part and a specific part. The general part gives information relating to the SARSO and to SAARC Standards in general, i.e.

- a) designation and name of the STC that prepared the document,
- b) information regarding approval of the document.

In accordance with the above, a typical paragraph be introduced by the following wording:

“This SAARC Standard (..... revision, if required) which is identical to the ISO/IEC/CAC..... : (year) “ (Title)” was approved by the Governing Board/Technical Management Board of SARSO on the recommendations of the SARSO Secretariat.....Sectoral Technical Committee of SARSO.”

The specific part shall give a statement of as many of the following as are appropriate:

- a) an indication of any other SAARC Member State/international organization that has contributed to the preparation of the document;
- b) significant technical changes from any previous edition of the document, if applicable;
- c) a statement that the document cancels and replaces other documents in whole or in part;
- d) the relationship of the document to other documents (see 5.1.2.2).

6.4 Introduction

The introduction is conditional element, used if required, to give specific information or background about the technical content of the document, about the reasons prompting its preparation and any special feature in the document. It shall not contain requirements.

6.5 Scope

This element shall appear at the beginning of each document and define without ambiguity the subject of the document and the aspects covered, thereby indicating the limits of applicability of the document or particular parts of it. It shall not contain requirements.

The documents that are subdivided into parts, the scope of each part shall define the subject of that part of the document only. In a Standard subdivided into sections, the scope covering all the sections shall be given once only.

Scope shall be worded as statements of fact. Forms of expression such as the following shall be used in drafting the scope:

“This SAARC Standard

- specifies/covers requirements.....
- specifies the dimensions of
- specifies a method of.....
- specifies the characteristics of.....
- establishes general principles for
- establishes a system for
- describes methods for
- gives guidelines for

- gives rules for
- provides guidance on
- defines terms.....

Statements of applicability of the document shall be introduced by wordings such as:

“This SAARC Standard is applicable to ...”

6.6 Normative references

This conditional element, shall give a list of the referenced documents cited (see 7.6.4) in the document in such a way as to make them indispensable for the application of the document. For dated references, each shall be given with its year of publication, or, in the case of enquiry or final drafts, with a dash together with a footnote “To be published.”, and full title. The year of publication or dash shall not be given for undated references. When an undated reference is to all parts of a document, the publication number shall be followed by the indication “(all parts)” and the general title of the series of parts.

In principle, the referenced documents shall be documents published by SARSO. Documents published by other bodies may be referred to in a normative manner provided that the referenced document is recognized by the concerned Sectoral Technical Committee as having wide acceptance and authoritative status as well as being publicly available.

The list shall be introduced by the following wording:

“The following documents/The documents listed in Annex..., in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.”

The list shall not include the following:

- a) referenced documents which are not publicly available;
- b) referenced documents which are only cited in an informative manner;
- c) referenced documents which have merely served as bibliographic or background material in the preparation of the document.

Such referenced documents may be listed in a bibliography (see 6.16) or informative annex (see 6.15.3).

6.7 Terms and definitions

This is a conditional element giving definitions necessary for the understanding of certain terms used in the document. The following introductory wording shall be used where all terms and definitions are given in the document itself:

“For the purposes of this Standard, the following terms and definitions apply.”

In the case where terms defined in one or more other relevant Standards on terminology, the following introductory wording shall be used:

“For the purposes of this Standard, the terms and definitions given in ... apply.”

In the case where terms defined in one or more other documents also, the following introductory wording shall be used, altered as necessary:

“For the purposes of this Standard, the terms and definitions given in ... and the following apply.”

Terms shall be listed in alphabetical order or logical sequence, as appropriate. Definitions of the terms shall be unambiguous, precise and given in descriptive form.

6.8 Symbols and abbreviated terms

This is conditional element giving a list of the symbols and abbreviated terms necessary for the understanding of the documents.

If in a Standard, large numbers of symbols are used in various formulae or otherwise in the main text, it may be desirable to list the commonly appearing symbols and abbreviated terms necessary for the understanding of the document under this clause which may read as follows:

'For the purpose of this Standard, the following letter symbols have the meaning indicated against each, other symbols used in this Standard have been explained at appropriate places.'

Unless there is a need to list symbols in a specific order to reflect technical criteria all symbols should be listed in alphabetical order in the following sequence:

- uppercase Latin letter followed by lower case Latin letter (*A, a, B, b*, etc.);
- letters without indices preceding letters with indices, and with letter indices preceding numerical ones (*B, b, C, Cm, C₂, c, d, d_{ext}, d_{int}, d₁*, etc.);
- Greek letters following Latin letters (*Z, z, A, α, B, β, ..., Λ, λ*, etc.);
- any other special symbols.

6.9 Classification

This element is applicable to product Standards. If classification in grades, types or classes are to be separately specified, their designations should be included.

6.10 Manufacture

This is a conditional element applicable to product Standards. Wherever considered necessary the manufacturing process may be specified.

6.11 Requirements

This element is conditional. If present, it shall contain the following:

- a) all characteristics relevant to the aspects of the products, processes or services covered by the document, either explicitly or by reference;
- b) required limiting values of quantifiable characteristics;
- c) for each requirement, either a reference to the test method for determining or verifying the values of the characteristic, or the test method itself (see 6.13).

Requirement clauses shall be as self-contained as possible. Each requirement clause should preferably deal with one requirement and have a title stating clearly the matter dealt within the clause. Requirement clauses shall state tolerances, where necessary.

Contractual requirements (concerning claims, guarantees, covering of expenses, etc.) and legal or statutory requirements shall not be included.

In some product Standards, it may be necessary to specify that the product shall be accompanied by warning notices or by instructions to the installer or user, and to specify their nature.

Documents listing characteristics for which suppliers or purchasers are required to state values or other data not specified by the document itself shall specify how such values are to be measured and stated.

Requirement clauses may be obligatory, optional or recommendatory and informative, according to their operative character. The sequence of their appearance in a Standard and their grouping shall be decided according to individual requirements.

- a) *Obligatory clauses* - Clauses dealing with requirements conformity to which is obligatory. Such clauses may be general or specific in character.
- b) *General requirement clauses* - Clauses dealing with common requirement applicable to the subject-matter of the Standard as a whole.
- c) *Specific requirement clauses* - Clauses dealing with requirements covering a particular attribute of the material or requirement for a particular purpose.
- d) *Optional or recommendatory clauses* - Clauses dealing with requirements of non-obligatory or recommendatory character, conformity to which is left to the contracting parties. These clauses may also be general or specific in character.
- e) *Informative clauses* - Clauses dealing with matter which is neither obligatory nor optional in character, but which is likely to be helpful in selecting material or otherwise likely to enhance the usefulness of the Standard. If not included elsewhere, such information may be given in the form of informative clauses or as notes to the relevant clauses of the Standard. Informative clauses may also be either general or specific.

6.12 Sampling

6.12.1 This conditional element, applicable to product Standards, specifies the conditions and methods of sampling, guidance on criteria for acceptance of lot based on sampling inspection as well as the method for the preservation of the samples. This element may appear at the beginning of element 6.13.

6.12.2 Sampling clauses should clearly describe:

- a) definition of a lot,
- b) number of samples to be tested for various requirements of the specification,
- c) method of selection of samples from the lot, and
- d) criterion for acceptance - acceptance number for each requirement for deciding the conformity of the lot as a whole to the requirements of the specification.

6.13 Test methods

6.13.1 General

This conditional element gives all the provisions concerning the procedure for determining the values of characteristics or checking conformity to stated requirements, and for ensuring the reproducibility of the results. If appropriate, tests shall be identified to indicate whether they are type tests, routine tests, sampling tests and so on. In addition, the document shall specify the sequence of testing if the sequence can influence the results.

Test methods may be subdivided in the following order (where appropriate):

- a) principle;
- b) reagents and/or materials;
- c) apparatus/Testing equipment with accuracy;
- d) atmospheric conditions, like temperature and relative humidity;
- e) preparation and preservation of test samples and test pieces;

- f) test procedure;
- g) expression of results, including method of calculation/analysis and precision of the test method (repeatability and reproducibility of test method, where possible);
- h) test report (form of reporting results, including methods of presentation of data in the form of graphs, diagrams, etc.

Test methods may be presented as separate clauses, or be incorporated in the requirements (see 6.11), or be presented as annexes (see 6.15) or as separate parts (see 5.1.2). A test method shall be prepared as a separate document if it is likely to be referred to in a number of other documents.

Requirements, sampling and test methods are interrelated elements of product Standardization and shall be considered together even though the different elements may appear in separate clauses in a document, or in separate documents.

When drafting test methods, account shall be taken of documents for general test methods and of related tests for similar characteristics in other documents. Non-destructive test methods shall be chosen whenever they can replace, within the same level of confidence, destructive test methods.

Documents specifying test methods involving the use of hazardous products, apparatus or processes shall include a general warning and appropriate specific warnings.

A document which specifies test methods shall not imply any obligation to carry out any kind of test. It shall merely state the method by which the assessment, if required and referred to (for example in the same or another document, in a regulation, or in contracts), is to be carried out.

If a statistical method for the assessment of the conformity of a product, process or service is specified in the document, any statements of compliance with the document only relate to the conformity of the population or the lot.

If it is specified in the document that every single item is to be tested in accordance with the document, any statements concerning the conformity of the product to the document mean that every single item has been tested and that each has fulfilled the corresponding requirements.

If test methods which differ from that most acceptable for general application are in use, this shall not be a reason for not specifying the most acceptable in a document.

6.13.2 Reagents and/or materials

This is a conditional element giving a list of the reagents and/or materials used in the document.

The content of a reagents and/or materials clause will usually comprise an optional introductory text together with a list detailing one or more reagents and/or materials.

Introductory text shall be used only to specify general provisions, to which cross-reference is not made. Any item to which it is necessary to cross-refer shall not be included in this text but shall be listed as a distinct entry as given in example below.

EXAMPLE:

3 Reagents, Use only reagents of recognized analytical grade and only distilled water or water of equivalent purity.

3.1 Cleaning medium, for example methanol or water containing a few drops of liquid detergent.

6.13.3 Apparatus

This is a conditional element giving a list of the apparatus used in the document. The rules for the structure, numbering and presentation of the "Apparatus" clause are identical to those for the "Reagents and/or

materials” clause (see 6.13.2). Wherever possible, equipment produced by a single manufacturer should not be specified. Where such equipment is not readily available, this clause shall include such specifications for the equipment as to ensure that comparable testing can be conducted by all parties.

6.13.4 Alternative test methods

If more than one adequate test method exists for a characteristic, only one shall in principle be the subject of a document. If, for any reason, more than one test method is to be standardized, a referee (often called “reference”) method may be identified in the document to resolve doubt or dispute.

6.13.5 Choice of test methods according to accuracy

When it is considered technically necessary, each test method shall incorporate a statement as to its limit of accuracy.

6.14 Marking, labelling and packaging

6.14.1 General

Marking, labelling and packaging are complementary aspects that shall be included wherever relevant, particularly for product Standards concerning consumer goods.

If necessary, the means of marking shall also be specified or recommended.

The element shall not deal with marks of conformity. Such marks are ordinarily to be applied under the rules of a certification system of SAARC Member States.

6.14.2 Requirements concerning marking, labelling and packaging of products

Documents containing a reference to the marking of the product shall specify, where applicable, the following:

- a) the content of any marking that is used to identify the product including, where applicable, the manufacturer (name and address) or responsible vendor (trade name, trademark or identification mark), or the marking of a product itself [e.g. manufacturer's or vendor's trademark, model or type number, designation or the identification of different sizes, categories, types and grades];
- b) the means of presentation of such marking, for example by the use of plates (sometimes called “name-plates”), labels, stamps, colours, threads (in cables), as appropriate;
- c) the location on the product, or in some cases on the packaging, where such marking is to appear;
- d) requirements for the labelling and/or packaging of the product (e.g. handling instructions, hazard warnings, date of manufacture);
- e) other information as may be required including statutory and regulatory requirements.

If the application of a label is required by the document, the document shall also specify the nature of the labelling and how it is to be attached, affixed or applied to the product or its packaging.

6.14.3 Requirements concerning documentation accompanying the product

Documents may require that the product be accompanied by some kind of documentation (for example, test report, handling instructions, other information appearing in the product packaging). When relevant, the content of such documentation shall be specified.

6.15 Annex

6.15.1 General

Annexes, if present, shall appear after the main text of the Standard and shall appear in the order in which they are cited in the text. Each annex shall be designated by a heading comprising the word “Annex” followed

by a capital letter designating its serial order, beginning with “A”, for example, “Annex A”. The annex heading shall be followed by the indication “(normative)” or “(informative)”, and by the title, each on a separate line. The reference of the clause number(s) in which an annex has been referred shall appear in parentheses below the designation of the annex. Numbers given to the clauses, tables, figures and mathematical formulae of an annex shall be preceded by the letter designating that annex followed by a hyphen. Numbers given to the subclauses shall be preceded by the designation of the clause followed by a full-stop. The numbering shall start afresh with each annex. A single annex shall be designated “Annex A”.

Annexes may be subdivided into clauses (see 5.2.1), subclauses (see 5.2.2), paragraphs (see 5.2.3) and lists (see 5.2.4). A clause shall not be created unless there is at least one further clause in the annex.

EXAMPLE:

Clauses in Annex A are designated “A-1”, “A-2”, “A-3”, etc. Subclauses in A-1 are designated “A- 1.1”, “A-1.2”, “A-1.3”, etc.

6.15.2 Normative annexes

Normative annexes give provisions additional to those in the body of the document. Their presence is conditional. An annex’s normative status (as opposed to informative — see 6.15.3) shall be made clear by the way in which it is referred to in the text, by an indication in the table of contents and under the heading of the annex.

6.15.3 Informative annexes

6.15.3.1 Informative annexes give additional information intended to assist the understanding or use of the document. They shall not contain requirements, except as described in 6.15.3.2. Their presence is optional. An annex’s informative status (as opposed to normative — see 6.15.2) shall be made clear by the way in which it is referred to in the text, by an indication in the table of contents and under the heading of the annex.

6.15.3.2 Informative annexes may contain optional requirements. For example, a test method that is optional may contain requirements but there is no need to comply with these requirements to claim compliance to the document.

6.16 Bibliography

6.16.1 A bibliography, if present, shall appear after the last annex.

6.16.2 For references to SARSO documents, the presentation rules specified in 7.6 shall be followed. For other referenced documents and information resources (printed, electronic or otherwise), the relevant rules set out in ISO 690 shall be followed.

For online referenced documents, information sufficient to identify and locate the source shall be provided. Preferably, the primary source of the referenced document should be cited, in order to ensure traceability. Furthermore, the reference should, as far as possible, remain valid for the expected life of the document. The reference shall include the method of access to the referenced document and the full network address, with the same punctuation and use of upper case and lower case letters as given in the source.

Referenced documents in the bibliography may be grouped under descriptive headings. Such headings shall not be numbered and shall not be listed in the table of contents.

6.17 Indexes

6.17.1 An index, if present, shall appear as the last annex.

6.17.2 A subject index, wherever considered necessary for inclusion in the Standard, shall be prepared based on the relevant rules set out in documents available with SARSO Secretariat, SAARC Member states or the best means of achieving their automated generation.

7 Other informative elements

7.1 Notes and examples integrated in the text

Notes and examples integrated in the text of a document shall only be used for giving additional information intended to assist the understanding or use of the document. They shall not contain requirements ("shall"); or any information considered indispensable for the use of the document, e.g. instructions (imperative), recommendations ("should") or permission ("may"). Notes may be written as a statement of fact.

Notes shall be printed in smaller type than that of the main text and shall immediately follow the relevant subject matter.

Care should be taken in the wording and location of a note to make clear the subject matter to which it refers. Otherwise it is not always certain whether a note following, for example, three subclauses, refers to all three of them or to the last one only, or possibly the last two. If there is any doubt, wording such as 'note to 8.5.1' should be used or the words '(see Note)' should be inserted in the text at the appropriate point(s).

Notes and examples are not numbered unless more than one appears in the same clause, subclause, figure or table.

When several notes occur within the same clause, subclause, figure or table, they shall be designated "NOTE 1", "NOTE 2", "NOTE 3", etc. or NOTES 1, 2, 3, etc. When several examples occur within the same clause, subclause, figure or table, they shall be designated "EXAMPLE 1", "EXAMPLE 2", "EXAMPLE 3", etc.

7.2 Footnotes to the text

Footnotes to the text give additional information; their use shall be kept to a minimum. As is the case for notes and examples integrated in the text (see 7.1) footnotes shall not contain requirements or any information considered indispensable for the use of the document.

Footnotes to figures and tables follow different rules (see 7.4.9 and 7.5.6).

Footnotes to the text shall be placed at the foot of the relevant page and be separated from the text by a short thin horizontal line on the left of the page.

Footnotes to the text shall normally be distinguished by Arabic numerals, beginning with 1, followed by one parenthesis and forming a continuous numerical sequence throughout the document: 1), 2), 3), etc. The footnotes shall be referred to in the text by inserting the same numerals, as superscripts, after the word or sentence in question: ¹⁾²⁾³⁾ etc.

In certain cases, for example in order to avoid confusion with superscript numbers, one or more asterisks or other appropriate symbols may be used instead: *, **, ***, etc.; †, ‡, etc.

7.3 Spelling and abbreviation of names of organizations, style, reference works and abbreviated terms

The spelling of the names of organizations, and their abbreviations, shall be as used by those organizations in English.

To facilitate understanding by all readers, the style shall be as simple and concise as possible. For English language, *The Concise Oxford Dictionary* shall serve as the authority for spelling.

Abbreviations are shortened forms of names or expressions employed in the text, tables and elsewhere.

Abbreviated terms shall be used with care, and their use shall be limited to those cases where it is not likely to cause confusion. In cases of doubt, words should be spelt out in full.

NOTE: Abbreviations 'i.e.', 'e.g.' and 'viz' shall not be used. Instead, the words 'that is', 'for example' and 'namely' shall be used in their place respectively.

If a list of abbreviated terms is not given in the document (see 5.2.2.2), then the first time that an abbreviated term is used, the full term shall be given with the abbreviated term following in parentheses.

An abbreviated term shall be specified only if used subsequently in the document.

The general rule is that an abbreviated term comprises capital letters, without a full-stop after each letter. Exceptionally, abbreviated terms consisting of the initial letters of words printed in lower case letters with a full-stop placed after each letter are used (for example, "a.c." for "alternating current") except in cases where the abbreviation results in a common English word or in an ambiguity as in the following cases:

- a) No. for number or numbers
- b) Fig. for figure

7.3.1 Use in text

Abbreviations shall be used sparingly in the text and captions, with due regard to usage in industry. Terms denoting units of measurements shall be abbreviated in the text when preceded by the amounts indicated in numerals. In tables and figures, the use of abbreviations may be governed by the need for conserving space.

7.3.2 Singular and plural

The same abbreviation shall be used both for singular and plural words, without exceptions.

EXAMPLE:

Incorrect	Correct
10 cms, Nos. 15 to 30, 10 nos.	10 cm, No. 15 to 30, 10 numbers

7.3.3 Letter Spacing

The letters of abbreviations shall neither be spaced nor punctuated.

7.3.4 Abbreviations in Titles

In general abbreviations should be avoided in the titles of Standards.

7.4 Figures

Figures should be used when they are the most efficient means of presenting information in an easily comprehensible form. It shall be possible to refer to each figure explicitly within the text.

7.4.1 Form

Figures shall be in the form of line drawings. Photographs may be used only if it is not possible to convert them into line drawings.

Computer-generated artwork shall be supplied, if relevant.

7.4.2 Designation

Figures shall be designated "Figure" and numbered with Arabic numerals, beginning with 1. This numbering shall be independent of the numbering of the clauses and of any tables. A single figure shall be designated "Figure 1".

For the numbering of figures in annexes, see 6.15.1. For the numbering of subfigures, see 7.4.10.

7.4.3 Layout of figure designation and title

The figure designation and title (if present) shall be centred horizontally below the figure and laid out as in the following example:

Figure # — Details of apparatus

The figure designation and title shall be separated by a dash.

7.4.4 Choice of letter symbols, style of lettering, and labelling

For a series of symbols indicating various lengths on a drawing use l_1, l_2, l_3 , etc. and not, for instance, A, B, C , etc. or a, b, c , etc.

Inclined (italic) letters shall be used for

- a) symbols for quantities,
- b) subscripts representing symbols for quantities, and
- c) symbols representing numbers.

The vertical (upright) style shall be used for all other lettering.

When all units for a quantity are the same, a suitable statement (for example, "Dimensions in millimetres") shall be placed above the right-hand corner of the figure.

7.4.5 Graphical symbols

Graphical symbols are pictorial symbols used to represent equipment, quantities, circuit connections, arrangements, etc., supplemented, where necessary, by letters and numerals.

Standard graphical symbols specified in relevant SAARC Standards, shall be used. Wherever such Standard symbols are not available, symbols commonly used in technological and commercial practice should be used, but in any given Standard use of symbols shall be consistent.

7.4.6 Diagrams

Diagrams, such as circuit diagrams and connection diagrams, for example for test circuits, shall be prepared in accordance with relevant SAARC Standards. Graphical symbols used in schematic diagrams shall be in accordance with relevant SAARC Standards.

7.4.7 Continuation of figures

When a figure is continued over several pages, it may be useful to repeat the figure designation, followed by the title (optional) and by "(1 of #)", where # is the total number of pages on which the figure appears, as given below:

Figure # (1 of #)

Any statements concerning units shall be repeated on all pages after the first, where applicable.

7.4.8 Notes to figures

Notes to figures shall be treated independently from notes integrated in the text (see 7.4.9). They shall be located above the designation of the relevant figure and shall precede figure footnotes. A single note in a figure shall be preceded by "NOTE", placed at the beginning of the first line of the text of the note. When several notes occur in the same figure, they shall be designated "NOTE 1", "NOTE 2", "NOTE 3", etc. A separate numbering sequence shall be used for each figure.

Notes to figures shall not contain requirements or any information considered indispensable for the use of the document. Any requirements relating to the content of a figure shall be given in the text, in a footnote to the figure or as a paragraph between the figure and its title. It is not necessary that notes to figures be referred to.

7.4.9 Footnotes to figures

Footnotes to figures shall be treated independently from footnotes to the text (see 7.2). They shall be located immediately above the designation of the relevant figure.

Footnotes to figures shall be distinguished by superscript lower case letters, beginning with “a”. The footnotes shall be referred to in the figure by inserting the same superscript lower case letter.

Footnotes to figures may contain requirements. As a consequence, it is particularly important when drafting the text of the figure footnote to distinguish clearly between different types of provision by using the appropriate verbal forms.

7.4.10 Subfigures

In general, the use of subfigures should be avoided whenever possible since it complicates document layout and management.

Subfigures shall only be used when it is essential for comprehension of the subject matter.

7.4.10.1 Designation and layout

Only one level of subdivision of a figure is permitted. Subfigures shall be identified by a lower case letter [e.g. Figure 1 may comprise subfigures a), b), c), etc.]. Other forms of identification of the subfigures such as 1.1, 1.2, ..., 1-1, 1-2, ..., etc. shall not be used.

7.5 Tables

Tables should be used when they are the most efficient means of presenting information in an easily comprehensible form. It shall be possible to refer to each table explicitly within the text.

Every formal table shall be referred to in the text of the Standard, preferably in numerical sequence, with appropriate wording to establish relevance and status.

In no case shall an entry in any row or column in a table be left blank.

A table within a table is not permitted. Subdivision of a table into subsidiary tables is not permitted.

7.5.1 Designation

Tables shall be designated “Table” and numbered with Arabic numerals, beginning with 1. This numbering shall be independent of the numbering of the clauses and of any figures. A single table shall be designated “Table 1”.

For the numbering of tables in annexes, see 6.15.1.

7.5.2 Layout of table designation and title

The table designation and title (in upper and lower letters in bold) shall be centred horizontally above the table and laid out as in the following example:

Table # — Dimensions and Tolerances

The table designation and title shall be separated by a dash.

Each formal table shall, as a general rule, be placed as near the first reference to it as possible without needlessly breaking into the middle of a paragraph. Necessity of turning a page to refer to a table should be avoided. However, tables requiring frequent references independent of the text may be given at the end of the Standard.

7.5.3 Headings

The first word in the heading of each column or row shall begin with a capital letter. The units used in a given column shall generally be indicated under the column heading.

EXAMPLE 1:

Type	Linear density kg/m	Inside diameter mm	Outside diameter mm

As an exception to this rule, when all units are the same, a suitable statement (for example, "Dimensions in millimetres") shall instead be placed above the right-hand corner of the table.

EXAMPLE 2:

Dimensions in millimetres

Type	Inside diameter	Outside diameter

The presentation shown in Example 3 is not permitted and shall be altered as shown in Example 4.

EXAMPLE 3:

Type Dimension	A	B	C

EXAMPLE 4:

Dimension	Type		
	A	B	C

7.5.4 Continuation of tables

Breaking of a table, namely, carrying it over from one page to another should be avoided as far as possible.

When a table is continued over several pages, it may be useful to repeat the table designation, followed by the title (optional) and by "(1 of #)", where # is the total number of pages on which the table appears. On the pages after the first, the number of table shall be repeated, followed by the words given below:

- '*continued*' on subsequent pages
- '*concluded*' on the final page.

If table is concluded on second page only the word '(concluded)' shall appear; the word '(continued)' shall not be used.

The column headings together with any statement concerning units shall be repeated on all pages after the first.

If required column numbers may be given in Arabic numerals in parenthesis below the column heading.

7.5.5 Notes to tables

Notes to tables shall be treated independently from notes integrated in the text (see 7.1). They shall be located within the frame of the relevant table and shall precede table footnotes (see the following Example). A single note in a table shall be preceded by “NOTE”, placed at the beginning of the first line of the text of the note. When several notes occur in the same table, they shall be designated “NOTE 1”, “NOTE 2”, “NOTE 3”, etc. A separate numbering sequence shall be used for each table.

Notes to tables shall not contain requirements or any information considered indispensable for the use of the document. Any requirements relating to the content of a table shall be given in the text, in a footnote to the table or as a paragraph within the table. It is not necessary that notes to tables are referred to.

EXAMPLE:

Type	Length	Inside diameter	Outside diameter
	l ₁ ^a	d ₁	
	l ₂	d ₂ ^{bc}	
A paragraph containing a requirement. NOTE 1 Table note. NOTE 2 Table note.			
^a Table footnote. ^b Table footnote. ^c Table footnote.			

7.5.6 Footnotes to tables

Footnotes to tables shall be treated independently from footnotes to the text (see 7.2). They shall be located within the frame of the relevant table, and shall appear at the foot of the table (see the Example in 7.5.5).

Footnotes to tables shall be distinguished by superscript lower case letters, beginning with “a”. The footnotes shall be referred to in the table by inserting the same superscript lower case letter.

Footnotes to tables may contain requirements. As a consequence, it is particularly important when drafting the text of the table footnote to distinguish clearly between different types of provision by using the appropriate verbal forms.

7.6 References

7.6.1 General

As a general rule, references to particular pieces of text shall be used instead of repetition of the original source material, since such repetition involves the risk of error or inconsistency and increases the length of the document. However, if it is considered necessary to repeat such material, its source shall be identified precisely.

References shall be made in the forms indicated in 7.6.2 to 7.6.4 and shall not be made to page numbers.

7.6.2 References to the document as a whole in its own text

For an individual document the form “this SAARC Standard” shall be used, except in the introductory texts for the “Normative references” (see 6.6) and the “Terms and definitions” (see 6.7) clauses.

For a document published in separate parts, the following forms shall be used:

- d) “this part of SARS XXXX” (reference to a part only);
- e) “SARS XXXX” (reference to a complete series of parts).

Such references are understood to include all amendments and revisions to the document, since they are undated (see 7.6.4.2).

7.6.3 References to elements of text

7.6.3.1 Reference to other parts of the text in a Standard shall be made by the use of clause number printed in normal font type, Use, for example, the following forms:

- a) “in accordance with Clause 3”;
- b) “according to 3.1”;
- c) “as specified in 3.1 b)”;
- d) “details as given in 3.1.1”;
- e) “see Annex B”;
- f) “the requirements given in B.2”;
- g) “see the Note in Table 2”;
- h) “see 6.6.3, Example 2”;
- i) “see 3.1, Formula (3)”.

It is unnecessary to use the term “subclause”.

Imprecise references such as “this Clause” and “this Annex” shall not be used.

7.6.3.2 If there is a need to refer to an unordered list item in another document, the following formulation shall be used:

“as specified in SARS XXXX, 3.1, second list item”.

7.6.3.3 References to figures and tables

Every figure and table included in the document shall normally be referred to in the text.

Use, for example, the following forms:

- a) “shown in Figure A.6”; should be used dot (.) instead of Hyphen (-) in all cases to keep consistency with ISO and IEC
- b) “(see Figure 3)”;
- c) “given in Table 2”;
- d) “(see Table B.2)”.

7.6.4 References to other documents

7.6.4.1 General

References to other documents may be undated or dated. All normative references, undated and dated, shall be given in the “Normative references” clause (see 6.6).

7.6.4.2 Undated references

Undated references may be made only to a complete document and only where at least one of the following cases applies:

- a) if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
- b) in case of informative references.

Undated references shall be understood to include all amendments to and revisions of the referenced document.

Use the following forms:

- a) "... as specified in SARS XXXX and SARS XXXX ...";
- b) "... see SARS XXXX ...".

7.6.4.3 Dated references

Dated references are references to

- a) a specific edition, indicated by the date of publication, or
- b) a specific enquiry or final draft, indicated by a dash.

The date of publication shall be indicated by the year or, for documents for which more than one edition of the document or an element within the document will be published in the same calendar year, the year of publication and the month (and where necessary the day).

Subsequent amendments to, or revisions of, dated references will need to be incorporated by amendment of the document referring to them.

NOTE: In this context a part is regarded as a separate document.

Within the text, references to specific divisions or subdivisions, tables and figures of another document shall always be dated.

Use the following forms:

- a) "... carry out the tests given in SARS XXXX:20XX ..." (dated reference to a published document);
- b) "... in accordance with SARS XXXX:—, Clause 3, ..." (dated reference to an enquiry or final draft);
- c) "... as specified in SARS XXXX:20XX, Table 1, ..." (dated reference to a specific table in another published document);
- d) "... as specified in SARS/TS XXXX:XX-20XX ..." (dated reference to a published document for which more than one edition is published in the same calendar year);
- e) "... see SARS XXXX-Database nr:XX-20XX (dated reference to an entry within a database Standard).

8 Representation of numbers and numerical values

8.1 The decimal sign shall be a full-stop.

8.2 If the magnitude (absolute value) of a number less than 1 is written in decimal form, the decimal sign shall be preceded by a zero.

EXAMPLE: 0.001.

8.3 Each group of three digits reading to the left and to the right of a decimal sign shall be separated by a small space from preceding digits or following digits respectively, except for four-digit numbers designating years.

EXAMPLE: 23 456 2 345 2.345 2.345 6 2.345 67 but the year 2011.

8.4 The multiplication cross (×) shall normally be used to indicate the multiplication of numbers and numerical values.

8.5 To express values of physical quantities, Arabic numerals followed by the international symbol for the unit shall be used.

9 Quantities, units, symbols and signs

9.1 Units of Measurement

The International System of units (SI) and the other units as set out in relevant SAARC Standard, that are recognized internationally, shall be the Standards units of measurement. Signs and symbols for quantities shall be chosen as a matter of convenience in Standards.

9.1.1 When a recognized unit outside SI is used, its relationship with the SI unit should be explained on its first occurrence in parenthesis.

EXAMPLE:

If bar is used for pressure, the relation, 1 bar = 10⁵ Pa should be given.

9.1.2 Letter symbols for quantities and units

Signs and symbols should be used as a matter of convenience in Standards. Signs and symbols for quantities and units shall comply with ISO/IEC 80000 series of Standards. Whenever required, their meanings may be explained by association with definitions in a separate clause, in a diagram, or in an annex or by association with the terms they represent when they first appear in the text.

10 Style and layout for numerals, units and mathematical formulae

10.1 Numerals and units

10.1.1 The general rule in technical documents is that when numerals appear in the middle of a sentence they should not be spelt out.

10.1.2 The unit symbols for degree, minute and second for plane angle shall follow immediately the numerical value; all other unit symbols shall be preceded by a space.

EXAMPLES:

1 m, 4 mm, 20 kg

NOTE: Numerals shall only be spelt out where their use may be confusing and ambiguous.

EXAMPLES:

- 1) Twelve 220 volt dc fans
- 2) Ten 50 ml beakers

10.1.3 Numbers associated with algebraic symbols and symbols of physical quantities shall be expressed by numerals and shall not be separated by a space.

EXAMPLES:

10B, 3xy

10.1.4 Exponents

Exponents shall be used in the abbreviations of units of measurements which are derived by multiplication of basic unit.

EXAMPLES:

For use in tables and figures:	1) N/mm ²
	2) N.mm ⁻²
For use in general text :	N/mm ²

10.1.5 Beginning of Paragraph or Sentence

Starting a paragraph or a sentence with a numeral should be avoided as far as possible; if unavoidable, the number shall be spelt out.

10.1.6 Fractions

Simple fractions, such as 1/2, 1/3, 1/4, 2/3, 3/4 should ordinarily be spelt out as one-half, one-third, one-fourth, two-thirds, three-fourths in general text. More complex fractions should ordinarily be avoided and replaced by appropriate decimal fractions, but where their use in general text is unavoidable they may be given in numerals.

The rules given in 10.1.7 to 10.1.9 apply to fractions as well as to numerals.

10.1.7 Decimals and Vulgar Fractions

Decimals shall be used as a first choice; vulgar fractions may be used only when necessary because of usage in an industry. A zero (0) shall appear before the decimal point if it is not preceded by a numeral. Singular form shall be used for common fraction and decimals less than one and plural form shall be used for any number greater than one.

EXAMPLES:

Not Recommended -	1) .25 ml
	2) 1.1 man-day
	3) 9/10
Recommended -	1) 0.25 ml
	2) 1.1 man-days
	3) 0.9

When using numerals in association with units and symbols, the decimal form should be preferred to the use of fractions.

EXAMPLE:

Not Recommended-	2 3/4 N
Recommended-	2.75 N

10.1.8 Numerals of More than Three Digits

Such numerals shall be given in groups of three with a space between every two consecutive groups; the grouping shall start from the unit towards left when there is no decimal point but when there is a decimal point, the grouping shall be made in both the directions from the decimal point. The use of punctuation marks like commas for breaking up numerals shall be avoided.

EXAMPLES:

Not recommended-	1) 5,716, 500
	2) 7652 54.37842
	3) 251 6.7
	4) 2.01 356
	5) .125673
Recommended-	1) 5 716 500
	2) 7 625 254.378 42
	3) 2 516.7
	4) 2.013 56
	5) 0.125 673

10.1.9 Significance of Stated Values

Numerals representing values shall be stated indicating their full significance. All zeros appearing at the end of either an integer, or decimal fraction, are counted as significant, and it should be carefully noted that any specified value terminating in one or more zeroes implies that the last zero has significance in the determination of the value and in its comparison with other values.

EXAMPLES:

- 1) 10, 50, 200 and 5 000 kg indicate accuracies of 0.5 kg each.
- 2) 2.5, 3.50 and 6.460 mm indicate accuracies of 0.05, 0.005 and 0.0005 mm, respectively.

10.1.10 Maximum Permissible Variations

Where the maximum permissible variations in either direction from a basic value are equal, the symbol '±' shall be used to indicate the limits of tolerance, as for example (7.12 ± 0.06) mm. Where the permissible variations from the basic value are unequal, the following form shall be used.

$$\begin{array}{r}
 +0.002 \\
 5.250 \\
 -0.003
 \end{array}$$

In all cases, the basic value and the permissible tolerances shall be specified to the same order of accuracy.

Dimensions and tolerances shall be indicated in an unambiguous manner.

EXAMPLES:

- 1) 80mm x 25mm x 50 mm (not 80 x 25 x 50 mm)
- 2) 80mm ± 2 mm
- 3) 80_{0}^{+2} mm (not 80_{-0}^{+2} mm)
- 4) $80 \text{ mm}_{-25}^{+50} \mu\text{m}$

10.1.11 In order to avoid misunderstanding, tolerances on percentages shall be expressed in a mathematically correct form.

EXAMPLES:

- 1) Write 'from 63% to 67%' to express a range.
- 2) Write '(65 ± 2)%' to express a centre value with tolerance. In neither case shall the form '65 ± 2%' be used.

10.2 Mathematical Material

10.2.1 Equations and Formulae

Equations should be expressed in a mathematically complete, dimensionally balanced and unambiguous form. The meanings of the symbols used in an equation should be explained in a formal, consistent style immediately below the equation in which they appear (see Example in 10.2.1.1). However, in a Standard that contains a large number of equations making repeated use of several symbols, these symbols should be explained at the outset in a separate 'symbols and abbreviations' clause. The symbols used should be consistent with the applicable SAARC Standards.

10.2.1.1 Placing of formulae

Formulae shall be placed in the centre of the text with adequate space above and below, and followed by the definitions of symbols in the order in which the symbols occur in the formulae. The word 'where' shall be placed in the margin just above the definitions which shall be individually indented so that all equality signs are in alignment.

EXAMPLE:

Calculate t from following formula:

$$t = \frac{pd_i}{2fj - p}$$

where

t is the shell thickness in mm,
 p is the design pressure in MPa,
 d_i is the inside diameter of the shell in mm,
 f is the design stress in MPa, and
 j is the joint factor

10.2.1.2 Italic letters shall be used in print for mathematical and quantitative (but not chemical) letter symbols, whether they are in the body of the text or mathematical equation, or are superscripts or subscript. But numerals in an equation in any position shall not be italicized.

10.2.1.3 No space is to be inserted between symbols that together represent a product of the individual symbols or between a number and the symbol it multiplies. A space is used on either side of a mathematical sign. Example given under 5.5.3.2 illustrates these general rules.

10.2.1.4 In a Standard containing equations which require frequent reference, all of them should be numbered sequentially throughout the Standard, including annexes, using Arabic numerals in parentheses.

EXAMPLE:

$$A = x + y + c^2 \quad \dots \quad \dots(1)$$

10.2.1.5 Equations should wherever possible be made to fit within the width of a single column of printed text. Where a substantial number of equations in a Standard is too long to fit a single column, the entire text of the Standard is composed across the double column width of the page.

If it is necessary to break an occasional equation that is too long for the next line, the break should be made at one of the following points:

- at =, >, ≈ and similar signs, in which case the sign appears only at the beginning of the 'turnover' line;
- at +, -, × and ÷ signs, the sign is inserted at the beginning of the second line; and
- between adjacent brackets, in which case a multiplication sign is inserted at the end of the first line and again at the beginning of the second line.

EXAMPLE:

$$f(x) = s[1 + \frac{1}{PD} \{E_1 (b + x_2)\} X \\ 4E_2 (1 + x_3) + 4E_3 (1 + x_4)]$$

10.2.2 Solidus

The use of solidus (/) can effect reduction of some displayed two-line expressions to single lines. However, when using the solidus scrupulous care is essential in the use of brackets and the order in which individual lines are placed.

10.2.3 Superiors and Inferiors

'Superiors' and 'inferiors' are printing terms referring respectively to indexes (superscripts) and suffixes (subscripts).

10.2.3.1 For fractional indexes, the solidus should be used. In the case of simple numerical fractions, where the normal upright form is generally clear.

EXAMPLE:

$$x^{a/b}, x^{1/2}, \left[\frac{a - b + c}{6} \right]^{\pi/2}$$

10.2.3.2 For expressions involving both superiors and inferiors, the superior appears to the right of the inferior rather than immediately above it. This does not apply to prime signs, which should always be closed to the term they relate to.

EXAMPLE:

Not recommended - d_3^2

Recommended - d^2_3

10.2.4 Alignment

Series of equations shall be indented consistently, and aligned wherever possible on the '=' sign. Series of numerical values shall also be aligned wherever possible on the decimal point or order of magnitude.

Plus, minus, multiplication and equal signs shall be aligned horizontally. All superiors and inferiors shall be similarly aligned and shall be of consistent size.

11 Amendments

11.1 General

Correction of errors and omissions, alterations and additions in the printed SAARC Standards should all be made through amendments, if a revised edition of the Standard is not called for. However, (SARS number) of a SAARC Standards shall not be changed through an amendment. The amendments to each individual Standard shall be numbered sequentially, starting with '1' for the first amendment to a given version. This information shall be presented in a format style at the head of the first page of the amendment and shall include the month and year of printing, and the designation and title of the relevant Standard and the designation of the STC. The text of the amendment may, if necessary, be preceded by a description of the need or purpose of the said amendment.

11.2 General elements of amendments to a Standard

11.2.1 The wording used in amendments is a direct instruction to 'substitute' or 'insert' or simply 'delete' as appropriate. The words 'amend.....to read', 'change.....to' or 'the text' should be read asetc., shall not be used.

11.2.2 In each amendment, the instructions should be arranged in sequence of clauses, tables, figures, annexes, etc., as they appear in the Standard. For helping in locating the features, page numbers may be indicated.

In the case of tables, figures, annexes, alphabetically arranged definitions of terms, etc. page reference shall be given as it helps in locating the feature in the Standard easily.

11.2.3 For insertion, substitution or deletion of short portions of text, such as word, phrase or part of a sentence, the relevant text is included, within quotation marks, in the same sentence as the instruction.

For insertions, the location should be described with precision, for example, '*Insert*between the second and third sentence'. The word 'add' shall not be used.

For deletions the precise extent of the deleted passage should be delineated either by description, for example, '*Delete* entirely paragraph 2', or by giving the opening and closing words of the passage, for example, "*delete*, in lines 3 to 5, *the text beginning*, 'if fitted.....and ending, 'shall be of 25 mm diameter'".

For Substitution of existing word or phrase or clause by another word or phrase or clause the following should be described:

Substitute '-----' for '-----' (existing).

For large passages, for example, a complete sentence, paragraph or clause, the new text is placed on a separate line, preceded by the words '*Insert* or *Delete* or *Substitute* the following'.

However, in order that the changes introduced are intelligible themselves, the alterations and substitutions shall desirably be given in the form of full sentences or even full clauses.

11.2.4 As a consequence of deletion or addition, of any clause, the subsequent clauses shall not normally be renumbered.

11.2.5 When amending tables, care is necessary to identify precisely the text to be altered. This can generally be done by making reference to the relevant column, for example, in column 12, row 'Length', and the row for example, 'in row 5', 'for nominal size 200'. However, unless the table is very long, and particularly for complicated tables, or if several alterations are to be made, the revised table or the appropriate portion of it shall be given as new matter for substitution.

11.2.6 If drawings are amended, the revised drawing shall be given in the amendment as new matter for substitution. If the alteration is not obvious, the instruction is accompanied by a statement, in words, of the nature of the change made in the drawing. Worded instructions alone are not sufficient.

11.2.7 Some amendments include several pages of new material or, in the case of loose leaf Standards, replacement sheets. In such cases, the top page of the amendment shall carry instructions to delete and substitute, remove and replace, as appropriate, and the new text is displayed on the following pages, separately from the instructions.

A typical example of an amendment is given below:

AMENDMENT NO. 5 OCTOBER 1999
TO
SARS XXXX:2014 SPECIFICATION FOR _____

(Page 2, clause 4.1) - Insert the following after the clause:

'4.2 Total chloride content in cement shall not exceed 0.1 percent by mass for cement used in structures other than prestressed concrete. For determination of chloride content in cement, SARS XXXX may be referred.

NOTE: For use in special structures like prestressed concrete, where chloride is a critical parameter, the limit of chloride content shall be 0.05 percent and shall be required to be measured if desired by the purchaser.'

[Page 2, Table 1, Sl. No. (iii), col 3] - Substitute '3.0' for '2'.

[Page 2, Table 1, Sl. No. (iv), col 3] - Substitute '6.0' for '6'.

(Page 3, Notes 1 and 2 under clause 7.2) – Delete (STC 2)

Annex - A (informative)

Principles for drafting

A-1 General

Although the principles for drafting given in Annex A are expressed in terms of product documents, they also apply, where appropriate, to any other kind of document.

A-2 Aim-oriented approach

A-2.1 Any product has an infinite number of properties, and only some of them are subject to international Standardization. The choice depends on the aims of the document to be prepared, the overriding aim being to ensure fitness for purpose of the product concerned.

Thus, a document or series of related documents may address, *inter alia*, questions of mutual understanding, health, safety, protection of the environment, interface, interchangeability, compatibility or interworking, and variety control.

A functional analysis of the product in question can help to identify the aspects to be included in the document.

In most documents, the aims of individual requirements are not usually indicated [although the purpose of a document and of some requirements can usefully be explained in the introduction (see 6.4)]. However, it is essential to identify these aims at the earliest possible working stage (not later than the first committee draft) to facilitate the taking of decisions regarding inclusion of the individual requirements.

In order to facilitate implementation by users, who may include not only manufacturers and purchasers but also certification bodies, testing laboratories and regulatory authorities who may wish to make reference to Standards, the aspects of a product which will be of separate interest to the various parties shall be clearly distinguished, either in separate clauses of the document or, preferably, in separate documents or parts of a document. Such a distinction shall be made, for example, between

- health and safety requirements;
- performance requirements;
- maintenance and service requirements; and
- installation rules.

Products intended for various purposes or for use under various conditions (for example different climatic conditions), or by various groups of users, may require different values of some characteristics, each value corresponding to some category or level, intended for some particular purpose or conditions. These values may be included in one document or in different documents, as appropriate, but it is essential that the correlation between purposes and values is clearly indicated.

Different categories or levels in different regions or countries may also be included if justified by their importance for trade. Requirements concerning the fitness for purpose of a product are sometimes expressed in terms of the conditions which must be satisfied in order for a designation or marking to be applied to a product (for example “shock-resistant” in the case of a wristwatch).

A-2.2 The promotion of mutual understanding usually necessitates the definition of terms used in the technical requirements, of symbols and signs, and the establishment of sampling methods, concerning each technical requirement specified in the document.

A-2.3 If health, safety aspects, the protection of the environment or the economical use of resources are relevant to the product, appropriate requirements shall be included. Otherwise, they can, in some countries, be made additional mandatory requirements which, if not harmonized, would constitute technical barriers to trade.

These requirements may need to have certain characteristics with limiting values (maximum and/or minimum) or closely defined sizes and, in some cases, even constructional stipulations (for example, to achieve non-interchangeability for safety reasons). The levels at which these limits are fixed shall be such that the element of risk is reduced as much as practicable.

Documents may, when relevant, specify technical requirements for packaging and conditions of storage and transportation of the product, either to prevent hazards, contamination or pollution arising from inadequate packaging, or to protect the product.

Aspects such as requirements dealing with health and safety (see ISO/IEC Guide 51 and IEC Guide 104) and requirements dealing with the environment (see ISO Guide 64 and IEC Guide 106), which could form part of governmental regulations, or Standards made mandatory, shall receive priority when preparing a Standard. To facilitate the principle of reference to Standards in governmental regulations (see ISO/IEC Guide 15) the relevant aspects shall be published in a separate Standard or a separate part of a Standard. When, however, such a separation is impracticable, such aspects shall be grouped together in one clause of the Standard.

Environmental requirements are usually covered by governmental regulations rather than SARSO documents, although there are exceptions particularly in the electrotechnical field.

However, the corresponding test methods shall, where appropriate, be standardized internationally. ISO 14040 and ISO 14044 provide procedures for the assessment of the environmental aspect of a product or process.

A-2.4 Interface, interchangeability, compatibility and interworking requirements, if relevant, are subject to international Standardization because they may constitute determining factors concerning the possible use of the product.

International Standardization of a particular product may be limited to such aspects and disregard other aims. If the aim of international Standardization is to ensure interchangeability, both the dimensional and functional aspects of the product shall be considered.

A-2.5 Variety control is an important aim of international Standardization of widely used materials, substances and elements such as fasteners, other machine parts, electronic components and electric cables (for such reasons as world trade, economy or safety, where the availability of interchangeable elements is essential and the Standardization of a certain variety at the international level is justified).

Variety may relate to sizes as well as to other characteristics. The relevant document shall contain the selected values (usually a series) and specify their tolerances.

A-3 The performance approach

If the performance approach (see 4.2) is adopted, care is necessary to ensure that important features are not inadvertently omitted from the performance requirements.

In the case of materials, if it is impossible to determine the necessary performance characteristics, the material may be specified but preferably with the inclusion of the phrase "... or other material which has been proved to be equally suitable".

Requirements concerning the manufacturing process shall usually be omitted in favour of tests to be made on the final product. There are, nevertheless, some fields in which reference to the manufacturing process is needed (e.g. hot rolling, extrusion) or even in which an inspection of the manufacturing process is necessary (e.g. pressure vessels).

However, the choice between specifying by description or by performance needs serious consideration because specification by performance may lead to complicated testing procedures of long duration and high cost.

A-4 The principle of verifiability

Whatever the aims of a product Standard, only such requirements shall be included as can be verified.

Requirements in documents shall be expressed in well-defined values (see 6.11). Phrases such as “sufficiently strong” or “of adequate strength” shall not be used.

Another consequence of the principle of verifiability is that the stability, reliability or lifetime of a product shall not be specified if no test method is known by means of which compliance with this requirement can be verified in a reasonably short time. A guarantee by the manufacturer, although useful, is not a substitute for such requirements. Guarantee conditions are considered to be outside the aspects to be included, being a commercial or contractual, and not a technical, concept.

A-5 Choice of values

A-5.1 Limiting values

For some purposes, it is necessary to specify limiting values (maximum and/or minimum). Usually one limiting value is specified for each characteristic. In the case of several widely used categories or levels, several limiting values are required.

Limiting values of strictly local importance shall not be included in a document.

A-5.2 Selected values

For some purposes, values or series of values may be selected, particularly for variety control and some interface purposes. They may be selected according to the series of preferred numbers given in ISO 3 (see also ISO 17 and ISO 497), or according to some modular system or other determining factors, as appropriate. For the electrotechnical field, recommended systems of dimensional sizes are given in IEC Guide 103.

Documents that have been established to specify such selected values for equipment or components that may be referred to in the provisions of other documents shall be regarded, in this respect, as basic Standards. Examples are as follows: for electrotechnical work, IEC 60063, which specifies series of preferred values for resistors and capacitors; for chemical testing, Standards for laboratory equipment developed by concerned technical committees.

Values of strictly local importance shall not be included in a document. In seeking to Standardize a rationalized series of values, examination shall be made as to whether any existing series would be acceptable for worldwide application.

If a series of preferred numbers is used, attention should be paid to the difficulties which may arise if fractions (such as 3.15) are introduced. They may sometimes be inconvenient or require unnecessarily high accuracy, in which case they should be rounded in accordance with IS 2:1960 or ISO 497. The introduction of different values for use in different countries (whereby both the precise value and the rounded value are contained in the document) should be avoided.

A-5.3 Values to be stated by the manufacturer

There may be some properties of a product that should not necessarily be specified (even though they decisively influence the performance of the product), if any number of varieties may be allowed.

The document may enumerate all characteristics which can be chosen freely by the manufacturer but the values of which are to be stated by the manufacturer. This statement may take various forms (name-plate, label, accompanying document, etc.).

For most kinds of complex product, the listing of performance data (product information) to be supplied by the manufacturer is preferable to the inclusion of performance requirements provided that corresponding test methods are defined.

A requirement that the values of a characteristic be stated by the manufacturer instead of specifying the values themselves is not permissible in the case of health and safety requirements.

A-6 Accommodation of more than one product size

If Standardization of a single size is an ultimate goal for a given product, but there is more than one widely accepted size in worldwide use, a committee may, if substantial support has been obtained within the committee, decide to include alternative product sizes in a document. However, in such cases, every effort shall be made to reduce the number of alternatives to a minimum, taking the following points into account:

- a) the volume of international trade in the sort of product involved shall serve as a criterion for "worldwide use", rather than the number of countries concerned or the volume of production in those countries;
- b) only such practices shall be taken into consideration as are likely to be in worldwide use in the reasonably foreseeable future (for example, five years or more);
- c) practices based on scientific, technological or economic principles, such as economy of materials and conservation of energy, shall be given preference;
- d) whenever alternative solutions are to be adopted internationally, they shall all be included in the same document and preferences for the different alternatives shall be provided; the reasons for the preferences shall be explained in the introduction to the document.

When agreed by the committee, a transitional period may be indicated during which the use of non-preferred values is permitted.

A-7 Avoidance of repetition

A-7.1 Any requirement concerning a product shall be specified in only one document, that which according to its title, contains that requirement.

A-7.2 In some fields it may be desirable to establish a document specifying generic requirements applicable to a group of products.

A-7.3 If it is necessary to invoke a requirement elsewhere, this should preferably be done by reference, not by repetition (see 7.6.1).

If, for convenience, the repetition of a requirement in another document seems useful, this may be done, provided that it is made clear that the requirement is repeated for information only, and that an informative reference is made to the document from which the requirement is reproduced.

