

Foreword

The formulation of this national standard was initiated by the Agricultural Machinery Testing and Evaluation Center (AMTEC) and the Department of Agriculture (DA).

This standard is the first part in the Formulation of Philippine Agricultural Engineering Standards (PAES) to guide those involved in standards work in the field of Agricultural Engineering.

This standard gives an overview on the aims and principles of standardization works. It also provides guidelines in the development of PAES.

In the preparation of this standard, the following documents/publications were considered:

PNS 01: Part 1:1998 - General Principles

PNS 01: Part 2: 1998 - BPS Technical Committee Organizations and Responsibilities for the Technical Work

PNS 01: Part 3: 1998 - Procedure for the Technical Work – Working Procedure in Preparing Standards

AMTEC Terminal Report, Enhancing the Implementation of AFMA Through Improved Agricultural Engineering Standards. 2000 – 2003.

Administrative Order No. 11. Series of 2001. Implementation of the National Agriculture and Fisheries Mechanization Program. Department of Agriculture.

General - Formulation of PAES – Part 1 : General Procedures

1 Scope

This standard presents the aims and principles of standardization and establishes the methodology in the formulation of the Philippine Agricultural Engineering Standards.

2 Definitions

For the purpose of this standard, the following definitions shall apply:

**2.1
standardization**

activity giving solutions to repetitive applications, to problems essentially in the spheres of science, technology and economics, aimed at the achievement of the optimum degree of order in a given context.

NOTE Generally, the activity consists of the processes of formulating, issuing and implementing standards.

**2.2
standard**

technical specification or other document available to the public, drawn up with the cooperation and consensus or general approval of all interests affected by it based on the consolidated results of science, technology and experience, aimed at the promotion of optimum community benefits and approved by a body recognized on the national, regional or international level.

3. Aims of standardization

NOTE – The general aims of standardization follow from the definition in 2.1. Standardization may have one or more specific aims, to make a product, process or service fit its purpose. Such aims can be, but are not restricted to, variety control, usability, compatibility, interchangeability, health, safety, protection of the environment, product protection, mutual understanding, economic performance, and trade. They can be overlapping.

3.1 fitness of purpose – Ability of a product, process or service to serve a defined purpose under specific conditions.

3.2 compatibility – Suitability of products, processes or services for use together under specific conditions to fulfill relevant requirements without causing unacceptable interactions.

3.3 interchangeability – Ability of one product, process or service to be used in place of another to fulfill the same requirements.

NOTE The functional aspect of interchangeability is called “functional interchangeability”, and dimensional aspect “dimensional interchangeability”.

3.4 variety control – Setting of the optimum number of sizes or types of products, processes or services to meet prevailing needs.

NOTE Variety control is usually concerned with variety reduction.

3.5 safety – Freedom from unacceptable risk of harm.

NOTE In standardization, the safety of products, processes and services is generally considered with a view to achieving the optimum balance of a number of factors, including non-technical factors such as human behavior that will eliminate avoidable risks of harm to persons and goods in an acceptable degree.

3.6 protection of the environment – Preservation of the environment from unacceptable damage from the effects and operations of products, processes and services.

3.7 product protection – Protection of a product against climatic or other adverse conditions during its use, transport or storage.

4 Principles of standards work

4.1 General – Standardization involves both preparation and use of standards. The main principles of standardization have been defined by ISO as:

4.1.1 Simplification – Standardization is essentially a continuing act of simplification reducing unnecessary complexity in manufactured goods as a result of the conscious efforts of society.

4.1.2 Cooperation – Standardization is a social, as well as an economic activity and should be promoted by the mutual cooperation of all concerned. The establishment of a standard should be based on a general consensus.

4.1.3 Implementation – The mere publication of a standard is of little value unless it can be implemented. Implementation may necessitate sacrifices by the few for the benefit of the many.

4.1.4 Selection – The action to be taken in establishing standards is essentially one of selection. The selection of standardization subjects and aspects should be made on priorities, and thereafter, steps should be taken to make the selected standards firm, or secure from change, for a certain period.

4.1.5 Revision – Standards should be reviewed at regular intervals and revised as necessary. The interval between revisions will depend on the particular circumstances, but is normally after five years.

4.1.6 Determination of compliance – When performance or other characteristics of a product are specified, the specification must include a description of the methods and tests to be applied in the specification. When sampling is to be adopted, the method, and if necessary, the size of the samples and frequency of sampling, should be specified.

4.1.7 Legal enforcement – The necessity of legal enforcement of national standards should deliberately be considered having regard to the nature of the standard, the level of industrialization and the laws and conditions prevailing in the society for whom the standards have been prepared.

These principles may be grouped under the following headings:

- (a) standards should be wanted;
- (b) standards should be used;
- (c) standards should be planned; and
- (d) standards should not be duplicated.

4.2 Standards should be wanted – The production of standards relies upon the willingness of all parties concerned to reach voluntary agreement among themselves for one or more stated purposes.

4.3 Standards should be used

4.3.1 Application of standards relies upon the voluntary commitment required in their preparation being extended to their use. The publication of a standard is of little value if it is not applied. **The intended application of a standard should be clearly understood at the start and borne in mind throughout its preparation.**

4.3.2 Standards should be written in a simple and clear way. Verification of compliance with specified requirements should always be possible within a realistic time and at a reasonable cost.

4.3.3 The legal enforcement of standards is discussed in 4.1.7.

4.4 Standards should be planned

4.4.1 The social and/or economic benefits of a standard should be compared with the total cost of preparing, publishing and maintaining it. The responsible committees should consider whether it is likely to be feasible to prepare the proposed standard in a technically and commercially acceptable form in time to be of use. In areas of rapid development, the balance should be struck between the risk of inhibiting innovation by premature standardization and the danger of allowing the spread of divergent and mutually incompatible solutions to the same problem. If the latter occurs, the cost of subsequent standardization is likely to be much greater.

4.4.2 A standard expresses what has been established or is about to be established. The process of writing standards is essentially one of selection. A standard can contain only what the interested parties are prepared to agree on at the time it is written. Thus decisions are needed on

when and how it is appropriate to standardize in a rapidly developing industry or to satisfy new community needs relating to safety of the environment.

4.4.3 Standards should be reviewed at regular intervals and appropriate action taken. A standard that does not evolve in keeping with the changing circumstances or technological advancement may become irrelevant or inhibit progress.

4.5 Standards should not be duplicated

4.5.1 Standardization can be pursued at different levels: by individuals, firms, associations, countries, regions, and worldwide. For economy of total effort, a standard should logically be prepared at the broadest level consistent with meeting the needs of interested parties within an acceptable timescale. The simultaneous preparation at different levels, of standards on identical aspects of identical subjects should be avoided as far as practicable.

4.5.2 For the same reason, any standards body embarking on a new project should take account of existing standards on the same subject, from whatever source. Even at international level, a *de facto* standard, suitable for formal adoption, may already be found to exist. In this respect the intended result of regional and international standardization is the “harmonization” of different countries national standards through standards being adopted that are identical with, or at least technically equivalent to, those in other countries.

5. Development of the Philippine Agricultural Engineering Standards

5.1 Secretariat and its responsibilities

5.1.1 The secretariat shall be formed and become the workhorse in the formulation of PAES.

5.1.2 The secretariat shall have the following responsibilities:

5.1.2.1 It shall be responsible for the research and writing of the standards from their initial draft to their final form.

5.1.2.2 It shall serve as the secretary to all meetings of the Technical Committee (TC).

5.1.2.3 It shall be responsible for the circulation of the draft standards to concerned agencies for comments and suggestions.

5.1.2.4 It shall organize the public hearings of the circulated draft standards for further consultation.

5.1.2.5 It shall integrate all comments and finalize the draft standards.

5.2 Technical Committee, composition and responsibilities

5.2.1 The number of the Technical Committee (TC) to be formed shall be based on the number of the areas of concern (e.g. agricultural production machinery, agricultural postharvest machinery, agricultural engineering materials, agricultural structures, etc.).

5.2.2 Each TC shall be composed of a chairman and four members. The Philippine Society of Agricultural Engineers (PSAE) and the Bureau of Product Standards (BPS) shall be required members of the Technical Committee. In order to achieve the purpose of standardization, transparency and consensus, a technical committee needs to represent the following sectors:

5.2.2.1 Trade/Industry association

5.2.2.2 Consumer association

5.2.2.3 Professional institution

5.2.2.4 Research organization/Academe

5.2.2.5 Government institution

5.2.3 The Technical Committee shall have the following responsibilities:

5.2.3.1 It shall review, modify and finalize the draft standards prepared by the secretariat.

5.2.3.2 It shall deliberate on the comments received from the circulation and from the public hearing on the draft standards and finalize the draft standards.

5.2.4 The Chairman of the Technical Committee is nominated by the members of the committee and is required to act impartially and to declare his interest, if he exercises a representative role in support of a particular point of discussion or if he has a personal connection.

5.2.5 TC Chairman shall have the following responsibilities:

5.2.5.1 Presides over technical committee meetings; guides and controls the discussion with the objective that the technical committee will reach balanced and prompt decision.

5.2.5.2 Exercises judgment without bias, particularly as some committee decisions have financial or legal consequences.

5.2.5.3 Organizes the order of discussion of items and the time allocated to each subject to ensure that the agenda can be completed without undue rush or time wasting on topics of minor importance.

5.2.5.4 Discourages committee members from reopening discussions on points which have previously received thorough consideration, unless very good reasons exist. Members absent from meetings where a particular decision was taken should be discouraged from reopening the subject and taking up valuable committee time. To allow proper consideration of their concerns and to enable the meeting to progress, members in these situations should be asked to submit their views in writing for review at the next meeting.

5.2.5.5 Develops an understanding of committee behavior and is able to control private discussions and disagreements between members.

5.2.5.6 Sees that the technical committee works fast or within the expected pace and adheres to programs. In practice, the tempo of committee work is very largely dependent upon the chairman's ability to guide the committee to achieve consensus in discussions where opposing point of views emerge.

5.2.5.7 Has the authority to overrule trivial objections, but sees to it that the minority voice in a committee should be given careful attention particularly if it reflects user's or consumer's view where adequate representation can be difficult to secure.

5.2.6 A member of the Technical Committee shall have the following responsibilities:

5.2.6.1 Attends all Technical Committee meetings.

5.2.6.2 Committee members representing organizations are responsible to keep their organization well informed about current committee project and should express the views of their organization rather than their own.

5.2.6.3 Studies all drafts and documents circulated in advance by the Secretariat and prepares his views before attending the meeting as this will greatly assist his constructive participation.

5.2.6.4 Considers decisions in Technical Committee meeting as vital as they affect life, health, national economy and prosperity.

6. Drafting of Philippine Agricultural Engineering Standards

6.1 The Technical Committee (TC) is the basic group responsible for deliberation of draft standards. The flow chart in the development of PAES is shown in annex A.

6.2 The following are the kinds of drafts which also relates to the development of PAES.

6.2.1 Preliminary draft – This may be an international standard or foreign standard, a draft submitted by an interested organization or individual, a draft prepared by the Secretariat, on the basis of researches and in consultation with the interests concerned, or a skeleton outline containing suggested clause headings.

6.2.2 Committee draft – It is a draft incorporating the decisions of the technical committee arising from its deliberations of the preliminary draft. It is the first formal statement of a genuine consensus of opinion of the members on a particular subject.

6.2.3 Draft for public review – This is the most significant stage in the preparation of a standard. It expresses the committee's considered views as to the recommended contents of the standard. This draft which was approved by the TC is circulated for one month to all interests concerned or presented in a public hearing for comments. When the period of one month has elapsed, all comments received are evaluated, consolidated and presented to the TC for consideration.

6.2.4 Final Draft – This is the draft incorporating all modifications of the draft for public review, as a result of the Technical Committee’s study of the comments received.

6.3 All PAES drafted and circulated by the Secretariat shall be submitted to the National Agricultural and Fishery Council (NAFC) which will serve as the central agency to compile and keep records of all standards formulated in the field of agricultural engineering..

7. Adoption and publication of the Philippine Agricultural Engineering Standards

7.1 All Philippine Agricultural Engineering Standards (PAES) require adoption by the Department of Agriculture (DA) and the Professional Regulation Commission (PRC).

7.2 The National Agricultural and Fishery Council (NAFC) shall endorse the final draft standards to the Secretary of Agriculture for adoption as PAES. The Secretary of Agriculture shall issue Administrative Order for adoption of PAES for the use of DA.

7.3 The Philippine Society of Agricultural Engineers (PSAE) shall endorse the final draft standards to the Board of Agricultural Engineering (BOAE) of the Professional Regulation Commission (PRC) for adoption as PAES. The Chairman of BOAE, with the concurrence of the PRC Commissioners, shall issue Board Resolution for the adoption of PAES as code of standards for agricultural engineers.

7.4 The National Agricultural and Fishery Council (NAFC) shall publish the standards adopted by the Department of Agriculture (DA) and by the Professional Regulation Commission (PRC) and send copies to all agencies of DA, other government agencies, colleges and universities, and private organizations and businesses involved in agricultural engineering.

Annex A

**Flow chart in the development of Philippine
Agricultural Engineering Standards**

