

PETRONAS TECHNICAL STANDARDS

DESIGN AND ENGINEERING PRACTICE

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This procedural specification has been approved by the Technical Standards Steering Committee (TSSC) on April 6th 1993.

It provides rules and guidelines for drafting and publication of a PETRONAS Technical Standards (PTS). It is applicable to all PTS created or revised after the issue date of this specification.

Your special attention is drawn to the preface which gives PETRONAS's requirements for the use of PTSs.

PTSs are supplied on the condition that these requirements are adhered to.



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Technical Standards Steering Committee (TSSC)

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PREFACE

PETRONAS Technical Standards (PTS) publications reflect the views, at the time of publication, of PETRONAS OPU/Divisions.

They are based on the experience acquired during the involvement with the design, construction, operation and maintenance of processing units and facilities. Where appropriate they are based on, or reference is made to, national and international standards and codes of practice.

The objective is to set the recommended standard for good technical practice to be applied by PETRONAS' OPU/Divisions in oil and gas production facilities, refineries, gas processing plants, chemical plants, marketing facilities or any other such facility, and thereby to achieve maximum technical and economic benefit from standardisation.

The information set forth in these publications is provided to users for their consideration and decision to implement. This is of particular importance where PTS may not cover every requirement or diversity of condition at each locality. The system of PTS is expected to be sufficiently flexible to allow individual operating units to adapt the information set forth in PTS to their own environment and requirements.

When Contractors or Manufacturers/Suppliers use PTS they shall be solely responsible for the quality of work and the attainment of the required design and engineering standards. In particular, for those requirements not specifically covered, the Principal will expect them to follow those design and engineering practices which will achieve the same level of integrity as reflected in the PTS. If in doubt, the Contractor or Manufacturer/Supplier shall, without detracting from his own responsibility, consult the Principal or its technical advisor.

The right to use PTS rests with three categories of users :

- 1) PETRONAS and its affiliates.
- 2) Other parties who are authorised to use PTS subject to appropriate contractual arrangements.
- 3) Contractors/subcontractors and Manufacturers/Suppliers under a contract with users referred to under 1) and 2) which requires that tenders for projects, materials supplied or - generally - work performed on behalf of the said users comply with the relevant standards.

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Without prejudice to any specific terms in respect of confidentiality under relevant contractual arrangements, PTS shall not, without the prior written consent of PETRONAS, be disclosed by users to any company or person whomsoever and the PTS shall be used exclusively for the purpose they have been provided to the user. They shall be returned after use, including any copies which shall only be made by users with the express prior written consent of PETRONAS. The copyright of PTS vests in PETRONAS. Users shall arrange for PTS to be held in safe custody and PETRONAS may at any time require information satisfactory to PETRONAS in order to ascertain how users implement this requirement.

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1.0 **INTRODUCTION**

1.1 **SCOPE**

This Procedural Specification provides rules and guidelines for drafting and publication of a PETRONAS Technical Standards (PTS).

This specification is not retroactively applicable. It is applicable to all PTS created or revised after the issue date of this specification.

1.2 **DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS**

Unless otherwise authorised by ESU, the distribution of this PTS is confined to companies forming part of the PETRONAS or managed by a Group company, and to Contractors nominated by them.

This specification is intended for use by all involved in the creation, and use of PTS.

If national and/or local regulations exist in which some of the requirements may be more stringent than in this PTS, the Contractor shall determine by careful scrutiny which of the requirements are the more stringent and which combination of requirements will be acceptable as regards to safety, environmental, economic and legal aspects. In all cases the Contractor shall inform the Principal of any deviation from the requirements of this PTS which is considered to be necessary in order to comply with national and/or local regulations. The Principal may then negotiate with the Authorities concerned with the object of obtaining agreement to follow this PTS as closely as possible.

1.3 **DEFINITIONS**

1.3.1 **General definitions**

The **Contractor** is the party which carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project or operation of a facility. The Principal may undertake all or part of the duties of the Contractor.

The **Manufacturer/Supplier** is the party which manufactures or supplies equipment and services to perform the duties specified by the Contractor.

The **Principal** is the party which initiates the project and ultimately pays for its design and construction. The Principal will generally specify the technical requirements. The Principal may also include an agent or consultant authorised to act for, and on behalf of, the Principal.

The word **Shall** indicates a requirement.

The word **Should** indicates a recommendation.

1.3.2 Specific definitions

Action Items - These are indications in the margin of the PTS that a position has to be clarified during the specification phase of a project or an order.

Auditable (requirement) - a requirement which is observable, measurable, is neither vague nor ambiguous, and has finite acceptance/rejection criteria.

Author - the relevant senior discipline specialist, responsible for the PTS within the originating discipline, and ultimately responsible for the contents of the PTS.

ESU - Engineering & Safety Unit. The group in PETRONAS responsible for the overall coordination and administration of the PTS system, in the interest of Operating Units/Divisions authorised to make use of PTS.

External Standards - standards (e.g. ISO, EN, ANSI, ASME, BS, API, etc.) issued under the auspices of a non-PETRONAS body.

OPU - an Operating Unit of PETRONAS may it be wholly or partly owned by PETRONAS.

OPUs Variation - a supplement to a Group Common Base Standard, generated by an OPUs to reflect the regional/local requirements of that OPU, subject to a technical/commercial authorisation process.

Project Variation - a supplement to a Group Common Base Standard (amended or not by OPU Variations), generated by a Project to reflect the specific requirements of that Project, subject to a technical/commercial process.

Standard - a document providing rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.

1.4 ABBREVIATIONS

PTS	-	PETRONAS Technical Standards
TSSC	-	Technical Standards Steering Committee
MESC	-	Materials and Equipment Standards and Code.
ESU	-	Engineering and Safety Unit

1.5 CROSS-REFERENCES

Where cross-references to other parts of this PTS are made, the referenced section number is shown in brackets.