

CONTECComissão de Normalização
Técnica**SC-04**

Civil Construction

**Presentation of Designs of Foundations and
Concrete Structures****1st Amendment**

This is the 1st Amendment to PETROBRAS N-1784 REV. C and it is used to alter the text of the Standard in the parts indicated below:

NOTE 1 The new page with the performed amendment is placed in its corresponding position.

NOTE 2 The amended pages, indicated the date of the amendment, are placed at the end of this standard, in chronological order, and shall not be used.

CONTENTS OF THE 1st AMENDMENT - 04/2014

- Section 2

Exclusion of ABNT NBR ISO 10209-2.

Presentation of Designs of Foundations and Concrete Structures

Procedure

This Standard replaces and cancels its previous revision.

The CONTEC - Authoring Subcommittee provides guidance on the interpretation of this Standard when questions arise regarding its contents. The Department of PETROBRAS that uses this Standard is responsible for adopting and applying the sections, subsections and enumerates thereof.

Technical Requirement: A provision established as the most adequate and which shall be used strictly in accordance with this Standard. If a decision is taken not to follow the requirement ("non-conformity" to this Standard) it shall be based on well-founded economic and management reasons, and be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by imperative nature.

Recommended Practice: A provision that may be adopted under the conditions of this Standard, but which admits (and draws attention to) the possibility of there being a more adequate alternative (not written in this Standard) to the particular application. The alternative adopted shall be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by verbs of a nonmandatory nature. It is indicated by the expression: **[Recommended Practice]**.

Copies of the registered "non-conformities" to this Standard that may contribute to the improvement thereof shall be submitted to the CONTEC - Authoring Subcommittee.

Proposed revisions to this Standard shall be submitted to the CONTEC - Authoring Subcommittee, indicating the alphanumeric identification and revision of the Standard, the section, subsection and enumerate to be revised, the proposed text, and technical/economic justification for revision. The proposals are evaluated during the work for alteration of this Standard.

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Introduction

PETROBRAS Technical Standards are prepared by Working Groups - WG (consisting specialized of Technical Collaborators from Company and its Subsidiaries), are commented by Company Units and its Subsidiaries, are approved by the Authoring Subcommittees - SCs (consisting of technicians from the same specialty, representing the various Company Units and its Subsidiaries), and ratified by the Executive Nucleus (consisting of representatives of the Company Units and its Subsidiaries). A PETROBRAS Technical Standard is subject to revision at any time by its Authoring Subcommittee and shall be reviewed every 5 years to be revalidated, revised or cancelled. PETROBRAS Technical Standards are prepared in accordance with PETROBRAS Technical Standard [N-1](#). For complete information about PETROBRAS Technical Standards see PETROBRAS Technical Standards Catalog.

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Foreword

This Standard is the English version (issued in 01/2013) of PETROBRAS N-1784 REV. C 11/2011. In case of doubt, the Portuguese version, which is the valid document for all intents and purposes, shall be used.

1 Scope

1.1 This Standard sets out the conditions that can be required for presentation of designs of direct and deep foundations, and prestressed and reinforced concrete structures.

1.2 This Standard does not apply to designs of offshore structure foundations.

1.3 For presentation of offshore foundation designs, PETROBRAS [N-2001](#) shall be complied with

1.4 This Standard applies to onshore and offshore concrete structure designs.

1.5 This Standard applies to procedures initiated as of their editing date.

1.6 This Standard contains Technical Requirements and Recommended Practices.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document applies.

PETROBRAS [N-381](#) - Execução de Desenhos e Outros Documentos Técnicos em Geral;

PETROBRAS [N-1644](#) - Construção de Fundações e de Estruturas de Concreto Armado;

PETROBRAS [N-1710](#) - Codificação de Documentos Técnicos de Engenharia;

PETROBRAS [N-2001](#) - Projeto e Execução de Fundação para Estrutura Marítima;

PETROBRAS [N-2064](#) - Emissão e Revisão de Documentos de Projeto;

ABNT [NBR 6118](#) - Projeto de Estruturas de Concreto;

ABNT [NBR 6120](#) - Cargas para o Cálculo de Estruturas de Edificações;

ABNT [NBR 6122](#) - Projeto e Execução de Fundações;

ABNT [NBR 6123](#) - Forças Devidas ao Vento em Edificações;

ABNT [NBR 7187](#) - Projeto de Pontes de Concreto Armado e de Concreto Protendido;

ABNT [NBR 7191](#) - Execução de Desenhos para Obras de Concreto Simples ou Armado;

ABNT [NBR 7808](#) - Símbolos Gráficos para Projetos de Estruturas;

ABNT [NBR 8196](#) - Desenho Técnico - Emprego de Escalas

ABNT [NBR 8403](#) - Aplicação de Linhas em Desenhos - Tipos de Linhas - Larguras das Linhas;

ABNT [NBR 8404](#) - Indicação do Estado de Superfícies em Desenhos Técnicos;

ABNT [NBR 8681](#) - Ações e Segurança nas Estruturas;

ABNT [NBR 9062](#) - Projeto e Execução de Estruturas de Concreto Pré-Moldado;

ABNT [NBR 10067](#) - Princípios Gerais de Representação em Desenho Técnico;

ABNT [NBR 10126](#) - Cotagem em Desenho Técnico.

NOTE For documents referred in this Standard and for which only the Portuguese version is available, the PETROBRAS department that uses this Standard should be consulted for any information required for the specific application.

3 Terms and Definitions

For purposes of this Standard, the terms and definitions of standards contained in Section 2 are applied.

4 General Conditions

4.1 Design Documents

4.1.1 To prepare and show designs of foundations and concrete structures, besides what is written in this Standard, the prescriptions set out in the Standards related in Section 2 shall be complied with.

4.1.2 The project shall be made of the following documents:

- a) descriptive memorandum;
- b) calculation report;
- c) drawings;
- d) technical specification.

4.1.3 All design documents shall adopt the standards of the International System of Units.

4.2 Descriptive Memorandum

4.2.1 It shall have the following elements:

- a) summary;
- b) product description;
- c) specification of materials to be used;
- d) recommendations for execution;
- e) specifications for execution control;
- f) recommendations for protecting treatment of foundations and concrete structures in an aggressive environment;
- g) list of constituent documents of design and standards used.