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Petroleum and natural gas industries — Specific requirements for offshore structures

Part 5: W

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Australian Industry Group
Australian Organisation for Quality
Australian Petroleum Production and Exploration Association
Australian Pipelines and Gas Association
Department for Energy and Mining, SA
Department of Mines, Industry Regulation and Safety WA
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Petroleum and natural gas industries — Specific requirements for offshore structures

Part 5: Weight management

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Preface

This Standard was prepared by the Standards Australia Committee ME-092, Materials, equipment, structures and related services for petroleum, petrochemical and natural gas industries.

The objective of this document is to specify requirements for managing and controlling the weight and centre of gravity (CoG) of offshore facilities by means of mass management during all lifecycle phases including conceptual design, front end engineering design (FEED), detail engineering, construction and operations. These can be new facilities (greenfield) or modifications to existing facilities (brownfield).

Weight management is necessary throughout operations, decommissioning, and removal to facilitate structural integrity management (SIM). The provisions of this document are applicable to fixed and floating facilities of all types.

Weight management only includes items with static mass.

Snow and ice loads are excluded as they are not considered to be part of the facility. Dynamic loads are addressed in ISO 19904-1, ISO 19901-6 and ISO 19901-7.

This document specifies the following:

(a) Requir s.

(b) Requirements for managing weight and CoG interfaces.

(c) Standardized terminology for weight and CoG estimating and reporting.

(d) Requirements for determining not-to-exceed (NTE) weights and budget weights.

(e) Requirements for weighing and determination of weight and centre of gravity (CoG) of tagged equipment, assemblies, modules, and facilities.

This document can be used as follows:

(i) As a basis for costing, scheduling or determining suitable construction method(s) or location(s) and installation strategy.

(ii) As a basis for planning, evaluating and preparing a weight management plan and reporting system.

(iii) As a contract reference.

(iv) As a means of refining the structural analysis or model.

This document is identical with, and has been reproduced from, ISO 19901-5:2021, *Petroleum and natural gas industries — Specific requirements for offshore structures — Part 5: Weight management*.

As this document has been reproduced from an International document, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 7, *Offshore structures*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 12, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 19901-5:2016), which has been technically revised.

The main changes are as follows:

— part title changed to "Weight Management";

— document restructured and columnization removed;

— weight control classes removed;

— requirements for weight management for all project phases implemented;

— annexes deleted or relocated to body of document:

  — previous Annex A “Weight data sheets – tagged equipment” combined with previous Annex B “Weighing certificates” to create new joined into a new Annex B “Weighing certificates”;

  — previous Annex C “Weight and load budget (WLB) formats and levels” replaced with new Annex C “Control weights”;

  — deleted previous Annex D “Major elements of the weight displacement”;

  — information in previous Annex E “Supplier weighing procedure” relocated to Clause 8;

  — deleted previous Annex F “Guidelines for displacement measurement of floating facilities”;

  - information in previous Annex G “Requirements for weight control during operations” relocated to Clause 7;
  - information in previous Annex H “Requirements for topsides weight estimation — New builds/green field” relocated to Clause 7;
  - information in previous Annex I “Executive summary description” relocated to Clause 7;
  - replaced previous Annex J “Weighing result uncertainty” with Annex F “Weighing result uncertainty”;
  - previous Annex K “Weight control database structure” replaced with new Annex G “Weight database structure”.
- Annexes added:
  - Annex A “Commentary”;
  - Annex D “Variable weight”;
  - Annex E “Example decision-making RAPID matrix”;

  - Annex I “Coordinate systems”;
  - Annex J “Weight allowances and reserves”;
  - Annex K “Weight management competencies”.

A list of all parts in the ISO 19901 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.