PD 8010-2:2015+A1:2016

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PUBLISHED DOCUMENT

Pipeline systems –

Part 2: Subsea pipelines – Code of practice

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Publishing and copyright information

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Contents

Summary of pages

This document comprises a front cover, an inside front cover, pages i to vi, pages 1 to 162, an inside back cover and a back cover.

Foreword

Publishing information

This part of PD 8010 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 March 2015. It was prepared by Subcommittee PSE/17/2, *Pipeline transportation systems*, under the authority of Technical Committee PSE/17, *Materials and equipment for petroleum*. A list of organizations represented on these committees can be obtained on request to their secretary.

Supersession

This part of PD 8010 supersedes PD 8010-2:2015, which is withdrawn.

Relationship with other publications

The PD 8010 series comprises:

- Part 1: *Steel pipelines on land – Code of practice*;
- Part 2: *Subsea pipelines – Code of practice*;
- Part 3: *Steel pipelines on land – Guide to the application of pipeline risk assessment to proposed developments in the vicinity of major accident hazard pipelines containing flammables – Supplement to PD 8010-1:2004*;
- Part 4: *Steel pipelines on land and subsea pipelines – Code of practice for integrity management*;
- Part 5: *Subsea pipelines – Guide to operational practice*.

This part of PD 8010 has been prepared to take into account the publication of BS EN 14161, which is based on ISO 13623. It provides a more comprehensive approach and covers a number of issues that are outside the scope of BS EN 14161.

Information about this document

The start and finish of text introduced or altered by Amendment No. 1 is indicated in the text by tags [A1⟩ ⟨A1]. Minor editorial changes are not tagged. Previous amendments are not indicated.

PD 8010-2:2015 was a full revision of the standard, and introduced the following principal changes:

- general updating of the text to take into account new standards and legislation introduced since the 2004 edition;
- update of the guidance for pipelines carrying carbon dioxide;
- update of the guidance on high integrity pressure protection systems (HIPPS), strain based design, fracture and fatigue;
- limiting of applicability to 500 m water depth.

This part of PD 8010 is intended for use by designers, manufacturers, operators and owners of pipelines. Clause **4** deals with health, safety and assurance and is relevant to all users of this document. Clause **5** to Clause **9** are mainly of relevance to designers. Clause **10** and Clause **11** are mainly of relevance to constructors. Clause **12** might be of relevance to both constructors and operators. Clause **13** and Clause **14** are mainly of relevance to operators.

The International System of Units (SI) (see BS EN ISO 80000-1) is followed in this part of PD 8010, except for units of pressure where the bar equivalent is provided for information.

NOTE 1 bar = 10^5 N/m^2 = 10^5 Pa. All references to pressure are gauge pressure, unless otherwise stated.

Hazard warnings

WARNING. This part of PD 8010 calls for the use of substances and/or procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Use of this document

As a code of practice, this part of PD 8010 takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this part of PD 8010 is expected to be able to justify any course of action that deviates from its recommendations.

It has been assumed in the drafting of this Published Document that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. "organization" rather than "organisation").

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a Published Document cannot confer immunity from legal obligations.

Particular attention is drawn to the following specific regulations:

- Coast Protection Act 1949 [1];
- Construction (Design and Management) Regulations 2007 [2];
- Continental Shelf Act 1989 [3];
- Environmental Protection Act 1990 [4];
- Food and Environment Protection Act 1985 [5];
- Gas Safety (Management) Regulations 1996 [6];
- Health and Safety at Work, etc. Act 1974 [7];
- Health and Safety at Work, etc. Act 1974 (Application Outside Great Britain) Order 1995 [8];
- Health and Safety at Work (Northern Ireland) Order 1978 [9];

- Offshore Chemicals Regulations 2002 [10];
- Offshore Installation (Safety Case) Regulations 2005 [11];
- Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996 [12];
- Offshore (Oil and Gas) Installation and Pipeline Abandonment Fees Regulations 2012 [13];
- Offshore Petroleum Production and Pipelines (Assessment of Environmental Effects) Regulations 1999 [14];
- Oil and Pipelines Act 1985 [15];
- Petroleum Act 1998 [16];
- Pipe-line Works (Environmental Impact Assessment) Regulations 2000 [17];
- Pipelines Safety Regulations 1996 [18];
- Pipelines Safety Regulations (Northern Ireland) 1997 [19];
- Pipelines Safety (Amendment) Regulations 2007 [20];
- Pressure Equipment Regulations 1999 [21];
- Pressure Systems Safety Regulations 2000 [22];
- Prevention of Oil Pollution Act 1986 [23];
- Radioactive Substances Act 1993 [24];
- Submarine Pipelines (Designated Owners) Order 2010 [25].

Attention is also drawn to guidance notes published by appropriate authorities.

1 Scope

This part of PD 8010 gives recommendations for and guidance on the design, selection, specification and use of materials, construction, installation, testing, commissioning, operation, maintenance and abandonment of steel subsea pipelines in offshore, nearshore and landfall environments. Guidance on the use of flexible composite pipelines is also given.

It is not intended to replace or duplicate hydraulic, mechanical or structural design manuals.

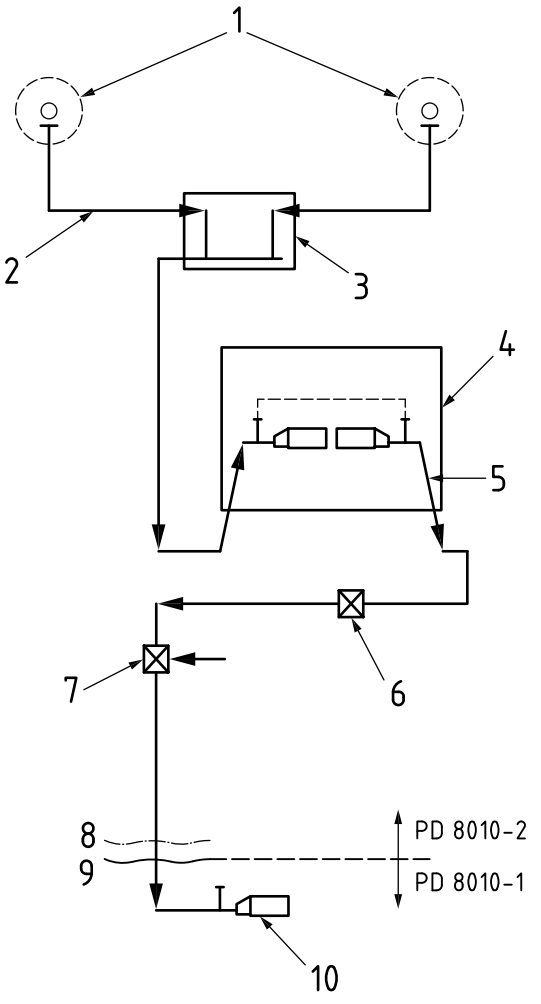
This part of PD 8010 is applicable to subsea pipelines intended for the conveyance of hydrocarbon liquids, hydrocarbon gases, carbon dioxide and other gases, liquids and gases in two-phase flow, fluid-based slurries and water.

NOTE 1 Although primarily concerned with subsea pipelines associated with the oil and gas industry, PD 8010-2 is likely to have application to a wider range of offshore activities.

The extent of pipeline systems covered by this part of PD 8010 is shown in Figure 1. This part of PD 8010 is applicable to pipelines in water depths up to 500 m.

NOTE 2 In deeper water, other international codes such as A1 *DNV-OS-F101* A1 *are applicable.*

Figure 1 **Extent of pipeline systems that are covered by this part of PD 8010**



Key

1	Wellheads
2	Flow line
3	Manifold
4	Offshore installation
5	Riser
6	Valve station
7	Intermediate station
8	Low water
9	High water
10	Receiving facility or AGI
——	Pipeline and facilities covered by PD 8010-2
- - -	Pipeline and facilities not covered by PD 8010-2
⊠	Intermediate station: valve, tee, wye
▭	Pig trap