

STN	Ropný a plynárenský priemysel. Potrubné prepravné systémy. Odporúčania na predĺženie životnosti potrubia (ISO/TS 12747: 2011).	STN P CEN ISO/TS 12747 45 1450
------------	---------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------

Petroleum and natural gas industries - Pipeline transportation systems - Recommended practice for pipeline life extension (ISO/TS 12747:2011)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/13

Obsahuje: CEN ISO/TS 12747:2013, ISO/TS 12747:2011

TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN ISO/TS 12747

October 2013

ICS 75.200

English Version

**Petroleum and natural gas industries - Pipeline transportation
systems - Recommended practice for pipeline life extension
(ISO/TS 12747:2011)**

Industries du pétrole et du gaz naturel - Systèmes de
transport par conduites - Pratique recommandée pour
l'extension de la durée de vie des conduites (ISO/TS
12747:2011)

Erdöl- und Erdgasindustrie - Rohrleitungstransportsysteme
- Empfehlungen für die Verlängerung der Lebensdauer von
Rohrleitungen (ISO/TS 12747:2011)

This Technical Specification (CEN/TS) was approved by CEN on 24 September 2013 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....3

Foreword

The text of ISO 12747:2011 has been prepared by Technical Committee ISO/TC 67 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” of the International Organization for Standardization (ISO) and has been taken over as CEN ISO/TS 12747:2013 by Technical Committee CEN/TC 12 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” the secretariat of which is held by AFNOR.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO/TS 12747:2011 has been approved by CEN as CEN ISO/TS 12747:2013 without any modification.

**Petroleum and natural gas industries —
Pipeline transportation systems —
Recommended practice for pipeline life
extension**

*Industries du pétrole et du gaz naturel — Systèmes de transport par
conduites — Pratique recommandée pour une longue durée des
conduites*





COPYRIGHT PROTECTED DOCUMENT

© ISO 2011

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions	3
4 Abbreviated terms	5
5 Life extension overview	5
5.1 General	5
5.2 Assessment process.....	6
5.3 Assessment requirements	6
5.4 Limitations on life extension.....	8
5.5 Pipeline system availability	9
6 Data compilation.....	9
6.1 General	9
6.2 Data.....	9
7 Technical integrity of the pipeline system.....	12
7.1 General	12
7.2 PIMS review.....	12
7.3 Remediation requirements	13
8 Future threat identification	13
8.1 General	13
8.2 Generic threats	13
8.3 Threats specific to offshore pipeline systems	14
8.4 Threats specific to onshore pipeline systems	14
9 Life extension assessment.....	14
9.1 Risk assessment	14
9.2 Pipeline system design review	16
9.3 Assessment of remnant life	17
9.4 Integrity management during extended life.....	20
9.5 Regulatory requirements.....	20
9.6 Update of systems and procedures	20
10 Life extension report.....	21
Bibliography.....	22

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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.

ISO/TS 12747 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 2, *Pipeline transportation systems*.

Introduction

Within ISO/TC 67/SC 2 there has been a series of discussions concerning both the needs and level of prescription required to address pipeline life extension issues. These have highlighted that

- operators are applying differing approaches, which leads to inefficient use of both operator and authority resources;
- the assessment and upgrading of existing facilities have been based on probabilistic or reliability-based methods;
- the level of detail delivered varies.

The purpose of this Technical Specification is to address the above concerns by providing a consistent approach to pipeline life extension assessment that can be applied by operators (or parties acting on their behalf) across the industry.

This Technical Specification is concerned with the proof of technical integrity of the pipeline system for the justification of extended operation. Integrity management is not covered in detail. However, the interface between a PIMS and the life extension process is considered because

- a PIMS, where present, forms an integral part of the integrity assessment of the pipeline system;
- a PIMS of some form is required for operation in extended life.

Factors affecting the future operability of the system but not the technical integrity, such as the loss of a control umbilical, are flagged as requiring assessment but are not addressed in full in this Technical Specification.

Whilst this Technical Specification is aimed primarily at the pipeline operators, it can also be of interest to other stakeholders such as

- regulators approving the life extension application;
- members of the public affected by the life extension application, such as landowners and developers.

In light of this, an overview of the life extension process and the key principles involved is given in Clause 5. The remainder of the document is intended to provide detailed guidance to those performing the life extension assessments.

All guidance is provided for use in conjunction with sound engineering practice and judgment. This Technical Specification is not intended for use as a design code.

Petroleum and natural gas industries — Pipeline transportation systems — Recommended practice for pipeline life extension

1 Scope

This Technical Specification gives guidance to follow, as a minimum, in order to assess the feasibility of extending the service life of a pipeline system, as defined in ISO 13623, beyond its specified design life. Pump stations, compressor stations, pressure-reduction stations and depots are not specifically addressed in this Technical Specification, as shown in Figure 1.

This Technical Specification applies to rigid metallic pipelines. It is not applicable to the following:

- flexible pipelines;
- pipelines constructed from other materials, such as glass reinforced plastics;
- umbilicals;
- topsides equipment;
- structures and structural components.

This Technical Specification is limited to life extension, which is an example of a change to the original design. Other changes, such as MAOP up-ratings, are excluded.

NOTE The assessment methodology is applicable to other changes to the design at the discretion of the user.

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 (including any amendments) applies.

ISO 13623, *Petroleum and natural gas industries — Pipeline transportation systems*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN