



NSAI
Standards

Irish Standard
I.S. EN ISO 24817:2017&LC:2018

Petroleum, petrochemical and natural gas industries - Composite repairs for pipework - Qualification and design, installation, testing and inspection (ISO 24817:2017, Corrected version 2018-01-01)

I.S. EN ISO 24817:2017&LC:2018

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National Foreword

I.S. EN ISO 24817:2017&LC:2018 is the adopted Irish version of the European Document EN ISO 24817:2017, Petroleum, petrochemical and natural gas industries - Composite repairs for pipework - Qualification and design, installation, testing and inspection (ISO 24817:2017, Corrected version 2018-01-01)

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Correction Notice

Reference: EN ISO 24817:2017

Title: Petroleum, petrochemical and natural gas industries - Composite repairs for pipework - Qualification and design, installation, testing and inspection (ISO 24817:2017, Corrected version 2018-01-01)

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please include the following minor editorial correction(s) in the document related to:

the following language version(s) :

- English
- French
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for the following procedure :

- PQ/UQ
- Enquiry
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- 2nd Parallel Formal Vote
- UAP
- TC Approval
- 2nd TC Approval
- Publication
- Parallel Publication

It has been brought to our attention that this document, issued on 2017-09-06, requires modification.

ISO has published corrected English and French versions of ISO 24817:2017 (Corrected version 2018-01-01).

Titles and Forewords have been updated accordingly.

Please find enclosed the updated English and French versions.

We apologise for any inconvenience this may cause.

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EUROPEAN STANDARD

EN ISO 24817

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2017

ICS 75.180.20

Supersedes EN ISO 24817:2015

English Version

**Petroleum, petrochemical and natural gas industries -
Composite repairs for pipework - Qualification and design,
installation, testing and inspection (ISO 24817:2017,
Corrected version 2018-01-01)**

Industries du pétrole, de la pétrochimie et du gaz
naturel - Réparations en matériau composite pour
canalisations - Conformité aux exigences de
performance et conception, installation, essai et
inspection (ISO 24817:2017, Version corrigée 2018-
01-01)

Erdöl-, petrochemische und Erdgasindustrie -
Reparatur von Rohrleitungen mit Verbundwerkstoffen
- Bewertung und Ausführung, Montage, Test und
Inspektion (ISO 24817:2017, korrigierte Fassung
2018-01-01)

This European Standard was approved by CEN on 5 September 2017.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 24817:2017 (E)

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European Foreword

This document (EN ISO 24817:2017) has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" in collaboration with Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2018 and conflicting national standards shall be withdrawn at the latest by March 2018.

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

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According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 24817:2017, Corrected version 2018-01-01 has been approved by CEN as EN ISO 24817:2017 without any modification.

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INTERNATIONAL STANDARD

ISO 24817

Second edition
2017-08

Corrected version
2018-01

Petroleum, petrochemical and natural gas industries — Composite repairs for pipework — Qualification and design, installation, testing and inspection

*Industries du pétrole, de la pétrochimie et du gaz naturel —
Réparations en matériau composite pour canalisations — Conformité
aux exigences de performance et conception, installation, essai et
inspection*



Reference number
ISO 24817:2017(E)

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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).

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

For an explanation on 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 the following URL: 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 6, *Processing equipment and systems*.

This second edition cancels and replaces the first edition (ISO 24817:2015), which has been technically revised.

This corrected version of ISO 24817:2017 incorporates the following correction:

- in [7.5.7, Formula \(15\)](#), “D4” has been replaced by “D⁴”.

ISO 24817:2017(E)

Introduction

The objective of this document is to ensure that pipework, pipelines, tanks and vessels repaired using composite systems that are qualified, designed, installed and inspected using this document will meet the specified performance requirements. Repair systems are designed for use within the petroleum, petrochemical and natural gas industries, and also within utility service applications. The main users of this document will be plant and equipment owners of the pipework and vessels, design contractors, suppliers contracted to provide the repair system, certifying authorities, installation, maintenance and inspection contractors.

Petroleum, petrochemical and natural gas industries — Composite repairs for pipework — Qualification and design, installation, testing and inspection

1 Scope

This document gives requirements and recommendations for the qualification and design, installation, testing and inspection for the external application of composite repair systems to corroded or damaged pipework, pipelines, tanks and vessels used in the petroleum, petrochemical and natural gas industries.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 75-3, *Plastics — Determination of temperature of deflection under load — Part 3: High-strength thermosetting laminates and long-fibre-reinforced plastics*

ISO 527-1, *Plastics — Determination of tensile properties — Part 1: General principles*

ISO 527-4, *Plastics — Determination of tensile properties — Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites*

ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 10952, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Determination of the resistance to chemical attack for the inside of a section in a deflected condition*

ISO 11357-2, *Plastics — Differential scanning calorimetry (DSC) — Part 2: Determination of glass transition temperature and glass transition step height*

ISO 11359-2, *Plastics — Thermomechanical analysis (TMA) — Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature*

ISO 14692, *Petroleum and natural gas industries — Glass-reinforced plastics (GRP) piping*

ASTM C581, *Standard Practice for Determining Chemical Resistance of Thermosetting Resins Used in Glass-Reinforced Structures Intended for Liquid Service*

ASTM D543, *Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents*

ASTM D696, *Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between Minus 30°C and 30°C with a Vitreous Silica Dilatometer*

ASTM D1598, *Standard Test Method for Time-to-Failure of Plastic Pipe under Constant Internal Pressure*

ASTM D1599, *Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing, and Fittings*

ASTM D2583, *Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor*

ASTM D2992, *Standard Practice for Obtaining Hydrostatic or Pressure Design Basis for Fiberglass (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings*

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