
Naftna in plinska industrija, vključno z nizkoogljično energijo - Popravila cevovodov s kompozitnimi materiali - Kvalifikacija in načrtovanje, montaža, preskušanje in upravljanje celovitosti (ISO 24817:2026)

Oil and gas industries including lower carbon energy - Composite repairs for piping - Qualification and design, installation, testing and integrity management (ISO 24817:2026)

Erdöl-, petrochemische und Erdgasindustrie - Reparatur von Rohrleitungen mit Verbundwerkstoffen - Qualifizierung und Auslegung, Montage, Prüfung und Inspektion (ISO 24817:2026)

Industries du pétrole et du gaz, y compris les énergies à faible teneur en carbone - Réparations en matériau composite pour tuyauterie - Conformité aux exigences de performance et conception, installation, essai et gestion de l'intégrité (ISO 24817:2026)

Ta slovenski standard je istoveten z: EN ISO 24817:2026

ICS:

75.180.20 Predelovalna oprema Processing equipment

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EUROPEAN STANDARD
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EN ISO 24817

September 2026

ICS 75.180.20

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English Version

Oil and gas industries including lower carbon energy -
Composite repairs for piping - Qualification and design,
installation, testing and integrity management (ISO
24817:2026)

Industries du pétrole et du gaz, y compris les énergies
à faible teneur en carbone - Réparations en matériau
composite pour tuyauterie - Conformité aux exigences
de performance et conception, installation, essai et
gestion de l'intégrité (ISO 24817:2026)

Erdöl-, petrochemische und Erdgasindustrie -
Reparatur von Rohrleitungen mit Verbundwerkstoffen
- Qualifizierung und Auslegung, Montage, Prüfung und
Inspektion (ISO 24817:2026)

This European Standard was approved by CEN on 17 August 2026.

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Ref. No. EN ISO 24817:2026 E

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European foreword

This document (EN ISO 24817:2026) has been prepared by Technical Committee ISO/TC 67 "Oil and gas industries including lower carbon energy" in collaboration with Technical Committee CEN/TC 12 "Oil and gas industries including lower carbon energy" 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 2027, and conflicting national standards shall be withdrawn at the latest by March 2027.

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International Standard

ISO 24817

Oil and gas industries including lower carbon energy — Composite repairs for piping — Qualification and design, installation, testing and integrity management

Industries du pétrole et du gaz, y compris les énergies à faible teneur en carbone — Reparations en matériau composite pour tuyauterie — Conformité aux exigences de performance et conception, installation, essai et gestion de l'intégrité

**Third edition
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CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
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Website: www.iso.org

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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 document 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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This document was prepared by Technical Committee ISO/TC 67, *Oil and gas industries including lower carbon energy*, Subcommittee SC 6, *Process equipment, piping, systems, and related safety*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 12, *Oil and gas industries including lower carbon energy*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 24817:2017), which has been technically revised.

The main changes are as follows:

- [Clause 7](#) has been split into three separate Clauses: [7](#) (Qualification), [8](#) (Repair feasibility assessment) and [9](#) (Design methodology) to enable clear referencing;
- in [Clause 9](#), the individual design stages have been reorganised so that they are now presented in the sequence they are used to make it easier to follow and review;
- where multiple options for design are presented, clarification has been added to guide on when each should be selected;
- design lifetimes of up to 50 years can now be considered and the guidance on managing them in service has been reinforced;
- requirements for considering temperature effects have been clarified;
- assessment of cyclic loading has been updated to maintain equivalence with guidance in ISO 14692;
- Poisson's effects have been reviewed and updated;
- Type A design formulae have been re-arranged so that they can be calculated rather than some requiring iteration;
- considerations of installing repairs on live lines (under pressure) have been revised;

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- guidance on using composite materials to reinforce defects such as crack-like-flaws has been added;
- the test method for determining the value of design strain specified in [Annex E](#) has been revised to remove the influence of the substrate in testing;
- units for variables has been standardised throughout. The main change is for the value of energy release rate, γ_{LCL} , which will now be in N mm rather than J m⁻²;
- [Annex I](#) has been added to provide guidance on how to assess requirements for applying repairs to Type B defects.

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ISO 24817:2026(en)**Introduction**

The objective of this document is to ensure that piping, pipelines, tanks and vessels repaired using composite systems that are qualified, designed, installed and managed using this document meet the specified performance requirements. The main users of this document are plant and equipment owners, design contractors, suppliers contracted to provide the repair system, certifying authorities, installation, maintenance and inspection contractors.

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Oil and gas industries including lower carbon energy — Composite repairs for piping — Qualification and design, installation, testing and integrity management

1 Scope

This document specifies requirements and gives recommendations for the qualification and design, installation, testing and integrity management for the external application of composite repair systems to corroded or damaged piping and pipelines, tanks and vessels.

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 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

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 8501 (all parts), *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness*

ISO 10952, *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 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 D638, *Standard Test Method for Tensile Properties of Plastics*

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*