



**International
Standard**

ISO 21809-4

**Oil and gas industries including
lower carbon energy — External
coatings for buried or submerged
pipelines used in pipeline
transportation systems —**

Part 4:

Polyethylene coatings (2-layer PE)

*Industries du pétrole et du gaz, y compris les énergies à faible
teneur en carbone — Revêtements externes des conduites
enterrées ou immergées utilisées dans les systèmes de transport
par conduites —*

Partie 4: Revêtements à base de polyéthylène (PE bicouche)

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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 2, *Pipeline transportation systems*.

This second edition cancels and replaces the first edition (ISO 21809-4:2009), which has been technically revised.

The main changes are as follows:

- inclusion of a qualification scheme;
- harmonization with the other parts of the ISO 21809 series;
- changes to [Table 8](#);
- changes to [Table 9](#);
- changes to [Annex G](#).

A list of all parts in the ISO 21809 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.

Oil and gas industries including lower carbon energy — External coatings for buried or submerged pipelines used in pipeline transportation systems —

Part 4: Polyethylene coatings (2-layer PE)

1 Scope

This document specifies the requirements for qualification, application, inspection, testing, handling and storage of materials for plant application of two-layer polyethylene coatings (2-layer PE) applied externally for the corrosion protection of bare steel pipe for use in pipeline transportation systems for oil and gas industries as defined in ISO 13623.

NOTE Pipes coated in accordance with this document are considered suitable for additional protection by means of cathodic protection.

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 80000-1, *Quantities and units — Part 1: General*

ISO 62, *Plastics — Determination of water absorption*

ISO 306, *Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)*

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

ISO 527-3, *Plastics — Determination of tensile properties — Part 3: Test conditions for films and sheets*

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

ISO 1133, *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics*

ISO 17855-2, *Plastics — Polyethylene (PE) moulding and extrusion materials — Part 2: Preparation of test specimens and determination of properties*

ISO 1183, *Plastics — Methods for determining the density of non-cellular plastics*

ISO 4427, *Plastics piping systems for water supply and for drainage and sewerage under pressure — Polyethylene (PE) —*

ISO 4437, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) —*

ISO 4625-1, *Binders for paints and varnishes — Determination of softening point — Part 1: Ring-and-ball method*

ISO 4892-2, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps*