

STN	Kovové a iné anorganické povlaky Fosfátové konverzné povlaky na kovových materiáloch (ISO 9717: 2024)	STN EN ISO 9717 03 8640
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Metallic and other inorganic coatings - Phosphate conversion coating of metals (ISO 9717:2024)

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. 10/24

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English Version

**Metallic and other inorganic coatings - Phosphate
conversion coating of metals (ISO 9717:2024)**

Revêtements métalliques et autres revêtements
inorganiques - Couches de conversion au phosphate
sur métaux (ISO 9717:2024)

Metallische und andere anorganische Überzüge -
Phosphatums wandlungsüberzüge auf Metallen (ISO
9717:2024)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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EN ISO 9717:2024 (E)

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European foreword

This document (EN ISO 9717:2024) has been prepared by Technical Committee ISO/TC 107 "Metallic and other inorganic coatings" in collaboration with Technical Committee CEN/TC 262 "Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys" the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by January 2025, and conflicting national standards shall be withdrawn at the latest by January 2025.

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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Endorsement notice

The text of ISO 9717:2024 has been approved by CEN as EN ISO 9717:2024 without any modification.



International Standard

ISO 9717

Metallic and other inorganic coatings — Phosphate conversion coating of metals

*Revêtements métalliques et autres revêtements inorganiques —
Couches de conversion au phosphate sur métaux*

**Fourth edition
2024-07**

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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 107, *Metallic and other inorganic coatings, Subcommittee SC 8, Chemical conversion coatings*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 262, *Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 9717:2017), which has been technically revised.

The main changes are as follows:

- the introduction has been clarified (1 bracket shifted);
- [5.1 Table 1](#) formatted and for Znph second line added to describe types of Znph; new [Table 1](#) copied on [Table C.1](#)
- [5.2](#) and ff.: all terms are uniformed from “phosphate coating” or “conversion coating” to “phosphate conversion coating” (when applicable);
- [5.2](#) and ff.: “after-treatment” was changed to “post treatment”; other definitions and spelling changed according to ISO 2080;
- [6.3 Table 2](#): definition of T1 recharged, second sentence deleted (this is content of T2);
- [6.3](#): last sentence updated to describe impact of neutral salt spray test;
- [6.4](#): revision of [6.4](#), thickness measurement replaced by area related mass;
- [Annex B](#): last sentence of [B.1](#) deleted: [Table B.1](#) updated;
- [Annex B](#): [Table B.1](#) and [B.3](#) headlines updated;
- [Annex B](#): [Table B.4](#) headline updated;

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- [Annex C](#): the element nickel has been added to [C.1](#), [C.2.3](#), [C.2.5](#) and [C.4](#); ICP was added as method to [C.2.3](#); XRF was added as method to [C.3](#).

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ISO 9717:2024(en)**Introduction**

Phosphate conversion coatings are produced by treating substrates with appropriate solutions. The main constituents of these solutions are the appropriate dihydrogen orthophosphates.

They are intended to

- impart corrosion resistance,
- improve adhesion to paints and other organic finishes,
- facilitate cold-forming operations, such as wire drawing, tube drawing and extrusion, and
- modify surface frictional properties to facilitate sliding.

Phosphate conversion coatings are produced by treatment with solutions, the main constituents of which are the appropriate dihydrogen orthophosphates. These phosphate conversion coatings are applied principally to ferrous materials and zinc, and differ in coating mass per unit area and apparent density, depending on

- the construction material and surface condition of the components,
- previous mechanical and chemical treatment of the components, and
- processing conditions for phosphating.

All phosphate conversion coatings are crystalline and porous but can be sealed substantially by subsequent sealant processes.

Metallic and other inorganic coatings — Phosphate conversion coating of metals

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1 Scope

This document specifies the requirements for phosphate conversion coatings which are usually destined for application on ferrous materials, aluminium, zinc, and their alloys (see [Annex B](#)).

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 2080, *Metallic and other inorganic coatings — Surface treatment, metallic and other inorganic coatings — Vocabulary*

ISO 3892, *Conversion coatings on metallic materials — Determination of coating mass per unit area — Gravimetric methods*

ISO 4519, *Electrodeposited metallic coatings and related finishes — Sampling procedures for inspection by attributes*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 9588, *Metallic and other inorganic coatings — Post-coating treatments of iron or steel to reduce the risk of hydrogen embrittlement*

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