ICS 25.040 SLOVENSKÁ TECHNICKÁ NORMA Apríl 2026

STN	**Aditívna výroba keramiky Východiskové materiály Charakterizácia keramickej kaše pri fotopolymerizácii v kadi (ISO/ASTM 52940: 2025)**	**STN EN ISO/ASTM 52940** 18 8532

Additive manufacturing of ceramics - Feedstock materials - Characterization of ceramic slurry in vat photopolymerization (ISO/ASTM 52940:2025)

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. 03/26

Obsahuje: EN ISO/ASTM 52940:2025, ISO/ASTM 52940:2025

142069

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO/ASTM 52940

November 2025

ICS 25.030

English Version

Additive manufacturing of ceramics - Feedstock materials - Characterization of ceramic slurry in vat photopolymerization (ISO/ASTM 52940:2025)

Fabrication additive de céramiques - Matières premières - Caractérisation de la barbotine de céramique en photopolymérisation en cuve (ISO/ASTM 52940:2025)

Additive Fertigung von Keramiken - Ausgangsmaterialien - Charakterisierung von Keramikschlicker der Vat-Photopolymerisation (ISO/ASTM 52940:2025)

This European Standard was approved by CEN on 16 November 2025.

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

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Ref. No. EN ISO/ASTM 52940:2025 E

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This document (EN ISO/ASTM 52940:2025) has been prepared by Technical Committee ISO/TC 261 "Additive manufacturing" in collaboration with Technical Committee CEN/TC 438 “Additive Manufacturing” the secretariat of which is held by AFNOR.

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The text of ISO/ASTM 52940:2025 has been approved by CEN as EN ISO/ASTM 52940:2025 without any modification.

International Standard

ISO/ASTM 52940

First edition
2025-11

Additive manufacturing of ceramics — Feedstock materials — Characterization of ceramic slurry in vat photopolymerization

Fabrication additive de céramiques — Matières premières — Caractérisation de la barbotine de céramique en photopolymérisation en cuve

Reference number
ISO/ASTM 52940:2025(en)

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Published in Switzerland

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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.

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This document was prepared by Technical Committee ISO/TC 261, *Additive manufacturing*, in cooperation with ASTM Committee F42, *Additive Manufacturing Technologies*, on the basis of a partnership agreement between ISO and ASTM International with the aim to create a common set of ISO/ASTM standards on Additive Manufacturing, and in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 438, *Additive manufacturing,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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International Standard **ISO/ASTM 52940:2025(en)**

Additive manufacturing of ceramics — Feedstock materials — Characterization of ceramic slurry in vat photopolymerization

1 Scope

This document specifies the characterization of ceramic slurry for use as feedstock in vat photopolymerization additive manufacturing (AM) processes. The characterization includes the composition and properties of the slurry, such as solids content, dynamic viscosity, particle size distribution, chemical composition, and solid dispersion stability. This document also provides available methods on sampling and preparing slurry samples for testing.

This document does not deal with safety aspects.

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 1513, *Paints and varnishes — Examination and preparation of test samples*

ISO 3252, *Powder metallurgy — Vocabulary*

ISO 8213, *Chemical products for industrial use — Sampling techniques — Solid chemical products in the form of particles varying from powders to coarse lumps*

ISO 9276-1, *Representation of results of particle size analysis — Part 1: Graphical representation*

ISO 9276-2, *Representation of results of particle size analysis — Part 2: Calculation of average particle sizes/diameters and moments from particle size distributions*

ISO 11358-1, *Plastics — Thermogravimetry (TG) of polymers — Part 1: General principles*

ISO 13097, *Guidelines for the characterization of dispersion stability*

ISO/ASTM 52900, *Additive manufacturing — General principles — Fundamentals and vocabulary*

ASTM B243, *Standard Terminology of Powder Metallurgy*

ASTM C242, *Standard Terminology of Ceramic Whitewares and Related Products*

ASTM C1145, *Standard Terminology of Advanced Ceramics*

ASTM D6370, *Standard Test Method for Rubber — Compositional Analysis by Thermogravimetry (TGA)*

ASTM D7348, *Standard Test Methods for Loss on Ignition (LOI) of Solid Combustion Residues*

ASTM E1131, *Standard Test Method for Compositional Analysis by Thermogravimetry*