



# International Standard

**ISO/ASTM 52933**

## Additive manufacturing — Environment, health and safety — Test method for the hazardous substances emitted from material extrusion type 3D printers in the non-industrial places

*Fabrication additive — Environnement, santé et sécurité —  
Méthode d'essai pour les substances dangereuses émises par les  
imprimantes 3D de type à extrusion de matière dans les lieux non  
industriels*

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## Foreword

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The committee responsible for this document is 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, 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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This corrected version of ISO/ASTM 52933:2024 incorporates the following corrections:

- [7.1.3.1](#), the cross-reference to [7.1.1](#) was corrected to [7.1.2](#);
- [7.1.3.4](#), in [Formula \(4\)](#),  $C_{ald}$  has been corrected to  $\overline{C}_{ald}$  and in [Formula \(5\)](#), "1,000" has been corrected to "1 000".

## Introduction

This document refers to the assessment of hazardous substances emitted during operation of material extrusion type AM machines, commonly known as “3D printers” installed in schools or public places for educational and hands-on purposes, and basic countermeasures for reducing the substances.

This document provides the necessary information and test procedures to reflect the characteristics of the AM process based on the previous international standards related to indoor air quality and to assess hazardous substances in the non-industrial places.

Operator, supervisor, and manager who are working at the non-industrial places will be able to use this document to measure and diagnose air quality. This document also includes appendices to help them try to reduce the hazardous substances emitted into the non-industrial spaces.

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