



# SLOVENSKI STANDARD

## oSIST prEN 54-26:2025

01-februar-2025

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### Sistemi za odkrivanje in javljanje požara ter alarmiranje - 26. del: Javljalniki ogljikovega monoksida - Točkovni javljalniki

Fire detection and fire alarm systems - Part 26: Carbon monoxide detectors - Point detectors

Brandmeldeanlagen - Teil 26: Kohlenmonoxidmelder - Punktförmige Melder

Systèmes de détection et d'alarme incendie - Partie 26 : Détecteurs de monoxyde de carbone - Détecteurs ponctuels

Ta slovenski standard je istoveten z: prEN 54-26

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## Fire detection and fire alarm systems - Part 26: Carbon monoxide detectors - Point detectors

Systèmes de détection et d'alarme incendie - Partie 26 :  
DéTECTEURS DE MONOXYDE DE CARBONE - DéTECTEURS  
ponctuels

Brandmeldeanlagen - Teil 26: Kohlenmonoxidmelder -  
Punktförmige Melder

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 72.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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**prEN 54-26:2024 (E)****European foreword**

This document (prEN 54-26:2024) has been prepared by Technical Committee CEN/TC 72 “Fire detection and fire alarm systems”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 54-26:2015.

EN 54, Fire detection and fire alarm systems, consists of the following parts:

- Part 1: Introduction;
- Part 2: Control and indicating equipment;
- Part 3: Fire alarm devices — Sounders;
- Part 4: Power supply equipment;
- Part 5: Heat detectors — Point heat detectors;
- Part 7: Smoke detectors — Point smoke detectors that operate using scattered light, transmitted light or ionization [the present document];
- Part 10: Flame detectors — Point detectors;
- Part 11: Manual call points;
- Part 12: Smoke detectors — Line detectors using an optical light beam;
- Part 13: Compatibility and connectability assessment of system components;
- Part 14: Guidelines for planning, design, installation, commissioning, use and maintenance [CEN Technical Specification];
- Part 16: Voice alarm control and indicating equipment;
- Part 17: Short circuit isolators;
- Part 18: Input/output devices;
- Part 20: Aspirating smoke detectors;
- Part 21: Alarm transmission and fault warning routing equipment;
- Part 22: Resettable line-type heat detectors [currently at acceptance stage];
- Part 23: Fire alarm devices — Visual alarms devices;
- Part 24: Components of voice alarm systems — Loudspeakers;
- Part 25: Components using radio links;
- Part 26: Carbon monoxide detectors — Point smoke detectors;

- Part 27: Duct smoke detectors;
- Part 28: Non-resettable line type heat detectors;
- Part 29: Multi-sensor fire detectors — Point smoke detectors using a combination of smoke and heat sensors;
- Part 30: Multi-sensor fire detectors — Point smoke detectors using a combination of carbon monoxide and heat sensors;
- Part 31: Multi-sensor fire detectors — Point smoke detectors using a combination of smoke, carbon monoxide and optionally heat sensors;
- Part 32: Planning, design, installation, commissioning, use and maintenance of voice alarm systems.

NOTE This list includes standards that are in preparation and other standards can be added. For current status of published standards refer to [www.cencenelec.eu](http://www.cencenelec.eu).

In comparison with the previous edition EN 54-26:2015, the following technical modifications have been made:

- removal of directional dependence test and requirements for mounting orientation for fire tests and CO response value measurement have been modified;
- removal of Air Movement test;
- in the Shock (operational) test the peak acceleration has been reduced as agreed by CEN/TC 72;
- in the Exposure to high level of carbon monoxide (operational) test the conditioning is at 500  $\mu\text{l/l}$  to align with other EN 54 CO standards;
- modification of Annex A, Gas test chamber and Annex F, Construction of the gas test chamber. This allows the use of a diffusion test chamber in addition to the previously specified recirculating test chamber.

## Introduction

Carbon monoxide (CO) is a product of the incomplete combustion of carbon-based materials. CO fire detectors can react promptly to smouldering fires involving carbonaceous materials because CO does not depend solely on convection, but also moves by diffusion. CO fire detectors might be better suited to applications where other fire detection techniques are prone to false alarms, i.e. due to dust, steam and cooking vapours.

The purpose of this document is to ensure that carbon monoxide (CO) fire detectors have adequate sensitivity and reliability for use in fire detection and fire alarm systems for residential commercial and industrial premises. In many fire situations CO is not produced in detectable quantities where pyrolysis of material rather than self-sustained combustion occurs (e.g. overheating cables) or in the early stages of rapidly burning flaming fires (e.g. liquid fuel fires). It is important that carbon monoxide fire detectors are only used where a risk assessment indicates that they are appropriate for detecting the types of fires that may occur. CO fire detectors should not be considered as a direct replacement for smoke detectors. CO fire detectors detect carbon monoxide gas rather than the smoke particulates detected by optical and ionization smoke detectors.

A number of different methods for sensing CO are suitable. However, most sensors will also be influenced by other gases and phenomena. Tests have therefore been included in the test schedule to assess cross-sensitivity to substances normally present in the service environment that may affect the performance of the detector.

As CO detectors are specifically well suited for the detection of incipient fires rather than flaming fires this document only includes tests to verify performance in smouldering fires. For this purpose, test fires TF2 and TF3 from EN 54-7 have been included in the test schedule. An additional validity criterion has been added to each of these tests to make them suitable for evaluating CO fire detectors.

CO detectors are intended to be installed indoors, and only indoor environmental test severities are specified in the test schedule.

The environmental tests specified in this standard cover normal general conditions. Other directives or regulations applicable to the CO fire detector or installation guidelines may require other environmental test methods or conditions (including test apparatus, procedure, and conditioning).

## 1 Scope

This document specifies product characteristics, test methods and performance criteria for point detectors using carbon monoxide sensing (CO fire detectors) for use in fire detection and fire alarm systems for buildings and civil engineering works.

## 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.

EN 54-1:2021, *Fire detection and fire alarm systems — Part 1: Introduction*

EN 54-7:2018, *Fire detection and fire alarm systems — Part 7: Smoke detectors — Point smoke detectors that operate using scattered light, transmitted light or ionization*

EN 50130-4:2011+A1:2014, *Alarm systems — Part 4: Electromagnetic compatibility — Product family standard: Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems*

EN 60068-1:2014, *Environmental testing — Part 1: General and guidance (IEC 60068-1:2013)*

EN 60068-2-1:2007, *Environmental testing — Part 2-1: Tests — Test A: Cold (IEC 60068-2-1:2007)*

EN 60068-2-2:2007, *Environmental testing — Part 2-2: Tests — Test B: Dry heat (IEC 60068-2-2:2007)*

EN 60068-2-6:2008, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal) (IEC 60068-2-6:2007)*

EN 60068-2-27:2009, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock (IEC 60068-2-27:2008)*

EN 60068-2-30:2005, *Environmental testing — Part 2-30: Tests — Test Db: Damp heat, cyclic (12 h + 12h cycle) (IEC 60068-2-30:2005)*

EN 60068-2-42:2003, *Environmental testing — Part 2-42: Tests — Test Kc: Sulphur dioxide test for contacts and connections (IEC 60068-2-42:2003)*

EN 60068-2-78:2013, *Environmental testing — Part 2-78: Tests — Test Cab: Damp heat, steady state (IEC 60068-2-78:2012)*

ISO 209:2007, *Aluminium and aluminium alloys — Chemical composition*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 54-1:2021 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp/ui/#home>

— IEC Electropedia: available at <https://www.electropedia.org/>

**prEN 54-26:2024 (E)****3.1****CO response value**

CO concentration in the proximity of the specimen at the moment that it generates an alarm signal, when tested as described in 4.1.5

Note 1 to entry: The response value may depend on signal processing in the detector and in the control and indicating equipment.

**3.2****rate -sensitive**

behaviour of a detector that depends on the rate of change of CO concentration

**4 Requirements and assessments****4.1 General testing methods****4.1.1 Atmospheric conditions for tests**

Unless otherwise stated in a test procedure, the testing shall be carried out after the test specimen has been allowed to stabilize in the standard atmospheric conditions for testing as described in EN 60068-1:2014 as follows:

- temperature: (15 to 35) °C;
- relative humidity: (25 to 75) %;
- air pressure: (86 to 106) kPa.

If variations in these parameters have a significant effect on a measurement, then such variations should be kept to a minimum during a series of measurements carried out as part of one test on one specimen.

The ambient concentration of CO shall not exceed 3 µl/l.

**4.1.2 Operating conditions for tests**

If a test method requires a specimen to be operational, then the specimen shall be connected to suitable supply and monitoring equipment with characteristics as required by the manufacturer's data. Unless otherwise specified in the test method, the supply parameters applied to the specimen shall be set within the manufacturer's specified range(s) and shall remain substantially constant throughout the tests. The value chosen for each parameter shall normally be the nominal value, or the mean of the specified range. If a test procedure requires a specimen to be monitored to detect any alarm or fault signals, then connections shall be made to any necessary ancillary devices (e.g. through wiring to an end-of-line device for conventional detectors) to allow a fault signal to be recognized.

The details of the supply and monitoring equipment and the alarm criteria used should be given in the test report.

**4.1.3 Mounting arrangements**

The specimen shall be mounted by its normal means of attachment and in its normal orientation in accordance with the manufacturer's instructions. If these instructions describe more than one method of mounting, or more than one acceptable orientation, then the method considered to be most unfavourable shall be chosen for each test.