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**Railway applications - Fire protection on railway vehicles -
Toxicity test of materials and components**

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English Version

**Railway applications - Fire protection on railway vehicles -
Toxicity test of materials and components**

Applications ferroviaires - Protection contre les
incendies dans les véhicules ferroviaires - Essai de
toxicité des matériaux et des composants

Bahnanwendungen - Brandschutz in
Schienenfahrzeugen - Prüfung der Toxizität von
Materialien und Komponenten

This European Standard was approved by CEN on 1 October 2018.

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EN 17084:2018 (E)**European foreword**

This document (EN 17084:2018) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

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Introduction

This document has been developed with the aim to take over the content of EN 45545-2:2013+A1:2015, Annex C.

NOTE It is also based on the results of the European project TRANSFEU - Transport Fire Safety Engineering in the European Union - FP7 (Contract Number: 233786) [8], [9].

EN 17084:2018 (E)**1 Scope**

This document describes the measurement of the toxicity potential of the products of combustion based on two test methods:

- Method 1: EN ISO 5659-2 Smoke chamber area-based test with Fourier transform infrared spectroscopy (FTIR) gas analysis techniques;
- Method 2: NF X70-100-2 Tubular furnace small mass-based test.

NOTE 1 This document also specifies test equipment and set out the calculation procedures for evaluation of toxicity data.

NOTE 2 This document can be used in addition to others for the determination of toxic gases from devices installed in tunnel.

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 45545-1, *Railway applications — Fire protection on railway vehicles — Part 1: General*

EN ISO 5659-2:2017, *Plastics — Smoke generation — Part 2: Determination of optical density by a single-chamber test (ISO 5659-2:2017)*

EN ISO 13943, *Fire safety — Vocabulary (ISO 13943)*

ISO 8421-1, *Fire protection — Vocabulary — Part 1: General terms and phenomena of fire*

ISO 12828-1, *Validation method for fire gas analysis — Part 1: Limits of detection and quantification*

ISO 12828-2, *Validation method for fire gas analysis — Part 2: Intralaboratory validation of quantification methods*

ISO 19701, *Methods for sampling and analysis of fire effluents*

ISO 19702:2015, *Guidance for sampling and analysis of toxic gases and vapours in fire effluents using Fourier Transform Infrared (FTIR) spectroscopy*

NF X70-100-1, *Fire tests — Analysis of gaseous effluents — Part 1: Methods for analysing gases stemming from thermal degradation*

NF X70-100-2, *Fire tests — Analysis of gaseous effluents — Part 2: Tubular furnace thermal degradation method*