



SLOVENSKI STANDARD
oSIST prEN 17192:2024
01-oktober-2024

Prezračevanje stavb - Kanali - Nekovinski kanali - Zahteve in preskusne metode

Ventilation for buildings - Ductwork - Non-metallic ductwork - Requirements and test methods

Lüftung von Gebäuden - Nichtmetallische Kanäle - Anforderungen und Prüfmethode

Ventilation des bâtiments - Réseau de conduits - Réseau de conduits non métalliques - Exigences et méthodes d'essai

Ta slovenski standard je istoveten z: prEN 17192

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ICS:

91.140.30	Prezračevalni in klimatski sistemi	Ventilation and air-conditioning systems
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oSIST prEN 17192:2024

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 17192

August 2024

ICS

Will supersede EN 17192:2018

English Version

Ventilation for buildings - Ductwork - Non-metallic ductwork - Requirements and test methods

Ventilation des bâtiments - Réseau de conduits - Réseau de conduits non métalliques - Exigences et méthodes d'essai

Lüftung von Gebäuden - Nichtmetallische Kanäle - Anforderungen und Prüfmethode

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 156.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 17192:2024) has been prepared by Technical Committee CEN/TC 156 “Ventilation of buildings”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 17192:2019.

EN 17192:202Y includes the following significant technical changes with respect to EN 17192:2019:

- Reaction to fire tests have been updated with classifications D and E, the tests are in accordance with the single-flame source test, according standard EN ISO 11925-2
- The thermal resistance test have been taken away because the test was based on flat material and is difficult to perform on material taken from a duct. The result from Thermal resistance test is relevant to non metallic ducts and can be added at a later stage if there is a adapted method available.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

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Introduction

This document handles technical requirements and test methods for Non metallic ducts and have been developed after the Metallic duct, the Flexible duct and the ductwork made from insulation duct board standards. All features in the other standards have been considered, used, ignored or adapted.

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1 Scope

This document defines the test methods and performance characteristics for rigid or semi-rigid non-metallic ductwork which are used for ventilation and air conditioning of buildings.

This document does not include flexible ducts such as those made of textiles, non-metallic spiral ductwork or others, which are handled in EN 13180 or ductwork made from insulation duct board, which is handled in EN 13403. Requirements for the air tightness of the ventilation system for non-residential buildings are given in EN 16798-3. For residential buildings, it is essential to apply national rules.

This document specifies methods to test rigid or semi-rigid non-metallic ductwork under laboratory conditions. On-site tests are excluded. The test methods and performance characteristics are valid for ventilation ducts with circular, rectangular or other cross sections.

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 1507, *Ventilation for buildings - Sheet metal air ducts with rectangular section - Requirements for strength and leakage*

EN 12237, *Ventilation for buildings - Ductwork - Strength and leakage of circular sheet metal ducts*

EN 12792, *Ventilation for buildings - Symbols, terminology and graphical symbols*

EN 13501-1, *Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN ISO 846, *Plastics - Evaluation of the action of microorganisms (ISO 846)*

EN ISO 1182, *Reaction to fire tests for products - Non-combustibility test (ISO 1182)*

EN ISO 1716, *Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value) (ISO 1716)*

ISO 22196, *Measurement of antibacterial activity on plastics and other non-porous surfaces*

EN ISO 11925-2, *Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2)*

prEN 17192:2024(E)**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 12792 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/>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1**ductwork**

system or network of ducts and their components for the transport of air

3.2**rigid duct**

duct which cannot be manually longitudinally compressed or decompressed and cannot be flexed in any direction without permanently damaging the cross sectional area

3.3**semi rigid duct**

duct which cannot be manually longitudinally compressed or decompressed but can be flexed in at least one direction without permanently damaging the cross sectional area

3.4**bending radius**

centreline radius after bending a duct

3.5**sealed connection length**

length of the perimeter where a duct or component is connected with another duct or component

3.6**internal surface area**

internal surface area is the sum of each internal perimeter multiplied by the length of that section of the ductwork

Note 1 to entry: The length of semi-rigid ductwork is the centreline, the length of rigid ductwork is defined in accordance with EN 14239.

3.7**maximum Service Temperature****STH**

highest temperature at which the ducts and fittings, when installed, continue to function within specified limits of performance

3.8**minimum Service Temperature****STL**

lowest temperature at which the ducts and fittings, when installed, continue to function within specified limits of performance

3.9**pressure drop**

difference between total pressure upstream and downstream of component or duct

3.10**purpose-designed seal**

sealing solution engineered and supplied by the manufacturer

3.11**purpose – designed fixation**

connection solution of the ductwork engineered and supplied by the manufacturer

3.12**manufacturer**

any natural or legal person who manufactures a construction product or who has such a product designed or manufactured and markets that product under his name or trademark

4 Symbols

Nomenclature shown in Table 1 is used throughout this document.

Table 1 — Symbols

Symbol	Quantity	Units
A_p	Product surface area	m ²
d_h	Hydraulic diameter	m
L_{sc}	Sealed connection length	m
A_s	Internal surface area	m ²
f_c	Air leakage factor	m ³ · s ⁻¹ · m ⁻²
f_{max}	Limits leakage rate	m ³ · s ⁻¹ · m ⁻²
p_a	Atmospheric pressure	Pa
p_s	Static gauge pressure	Pa
p_{test}	Test pressure	Pa
$q_{vl\ measured}$	Measured air leakage volume rate	m ³ · s ⁻¹
q_{vl}	Leakage volume rate of air flow	m ³ · s ⁻¹
t	Air temperature	°C

5 Specification**5.1 General**

The following ductwork parameters shall be specified:

- Air tightness;
- Pressure drop;
- Service temperature;

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- Reaction to fire;
- Resistance to external pressure;
- Microbial resistance.

5.2 Air tightness

The air tightness classes and the limits for the leakage rate are defined in Table 2.

Table 2 — Air tightness classes

Air tightness class		Air leakage limit (f_{max}) $m^3 \cdot s^{-1} \cdot m^{-2}$
Old (EN 12599:2012 and EN 13779:2008)	New (EN 16798-3:2017)	
	ATC 7	Not classified
	ATC 6	$0,0675 \times p_t^{0,65} \times 10^{-3}$
A	ATC 5	$0,027 \times p_t^{0,65} \times 10^{-3}$
B	ATC 4	$0,009 \times p_t^{0,65} \times 10^{-3}$
C	ATC 3	$0,003 \times p_t^{0,65} \times 10^{-3}$
D	ATC 2	$0,001 \times p_t^{0,65} \times 10^{-3}$
	ATC 1	$0,00033 \times p_t^{0,65} \times 10^{-3}$

NOTE If no leakage is measured the default value for calculation will be $0,0675 \times p_t^{0,65} \times 10^{-3}$.

The operating pressure range of the ductwork is defined by negative and positive pressures.

The air tightness class shall be declared together with the operating pressure range. The declared air tightness class shall be valid for the specified operating pressure range.

The operating pressure range shall be declared in increments of 10 Pa together with the air tightness class.

EXAMPLE

Example declaration:

Operating pressure range	Air tightness class declared
-60 to +260 Pa	ATC 4
-40 to +110 Pa	ATC 3
-20 to +50 Pa	ATC 2

Example explanation:

At an operating pressure of 125 Pa air tightness class ATC 4 can be declared.

At an operating pressure of 90 Pa air tightness class ATC 3 can be declared.

At an operating pressure of 40 Pa air tightness class ATC 2 can be declared.