



SLOVENSKI STANDARD
oSIST prEN 15780:2024
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Prezračevanje stavb - Kanali - Čistoča prezračevalnih sistemov

Ventilation for buildings - Ductwork - Cleanliness of ventilation systems

Lüftung von Gebäuden - Luftleitungen - Sauberkeit von Lüftungsanlagen

Ventilation des bâtiments - Réseaux de conduits - Propreté des systèmes de ventilation

Ta slovenski standard je istoveten z: prEN 15780

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91.140.30	Prezračevalni in klimatski sistemi	Ventilation and air-conditioning systems

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Ventilation for buildings - Ductwork - Cleanliness of ventilation systems

Ventilation des bâtiments - Réseaux de conduits -
Propreté des systèmes de ventilation

Lüftung von Gebäuden - Luftleitungen - Sauberkeit von
Lüftungsanlagen

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

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

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European foreword

This document (prEN 15780:2024) has been prepared by Technical Committee CEN/TC 156 “Ventilation for buildings”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 15780:2011.

prEN 15780:2024 includes the following significant technical changes with respect to EN 15780:2011

- Addition of kitchen extract equipment ventilation system (Annex J)

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prEN 15780:2024 (E)**Introduction**

This document provides test methods and classifications for cleanliness in ventilation systems.

This document is made with informative annexes that can be revised, completed and further added in future revisions of this document for specific system types, and products or applications in the system.

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1 Scope

This document specifies general requirements and gives guidelines for ventilation systems except for industrial, medical and laboratory facilities.

This document also specifies cleanliness criteria and procedures necessary in assessing and maintaining the cleanliness of ventilation systems over their lifetime from design and installation to maintenance.

This document applies to both new and existing ventilation systems with, and without, air conditioning and kitchen extract systems.

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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

acceptable cleanliness level

amount of dust or other contaminants not to be exceeded according to the specified measurement method

3.2

acceptable post-clean level

no loose dust or no adhered grease deposits are detected visually on the duct surface after cleaning and the system can reach an acceptable cleanliness level according to a defined measurement method

Note 1 to entry: In case of conflict (for example between the building owner and the user), or uncertainty, objective methods are needed to assess the cleanliness/dirtiness.

3.3

cleanliness

state or amount of pollution according to specification and a particular measurement method

Note 1 to entry: Cleanliness is not absolute; it is defined by limit values. Dirtiness is the exceeding of such a defined limit value.

3.4

dirtiness

value above limit value for cleanliness

4 Symbols and units

For the purpose of this document, the symbols and units in EN 12792 apply.

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5 Criteria for cleanliness and assessment

5.1 General considerations

The key issue is to design, build and maintain the whole ventilation system so that it can be kept clean enough during the whole lifetime of the system. The requirements in this document, as well as the methodology described in Clause 6, apply to the ductwork but can be also applied to air handling units according to EN 13053, entire systems and kitchen extract systems. Therefore, it is necessary to specify the cleanliness quality class from the beginning and include in the specification both design and installation issues, and means to maintain a sufficiently clean ventilation system for its whole lifetime.

The design and installation document should include the following, which are described in EN 16798-3, EN 16798-17, and EN 12599:

- a) cleanliness quality class;
- b) cleanliness criteria and measurement method;
- c) production of the system components;
- d) delivery to site;
- e) site storage;
- f) installation;
- g) airtightness;
- h) protection of components after installation;
- i) handing over the system;
- j) inspection.

5.2 Assessment of the need for cleaning

Cleanliness of ventilation system is a part of proper maintenance of the ventilation systems. Mostly the inspection of the cleanliness can arise from two purposes:

- a) to check if ventilation system is dirty and needs to be cleaned (exceeding of a “target level” of cleanliness);
- b) to evaluate cleanliness after the cleaning work.

NOTE The assessment methodology is presented in 6.2.

For existing buildings, the inspection shall include a study of existing documentation regarding cleanliness and ductwork/ventilation system that requires cleaning. The inspection can result in recommendations in updating these documents.

5.3 Design and handing over information

In the handing-over documents according to EN 12599, the cleanliness quality class, cleanliness criteria and measurement methods shall be specified. Recommendations for cleaning methods and guidelines for reaching the points to be cleaned shall also be given.

The design information shall consider the expected cleaning method. Where the system has been designed to be cleaned by wet cleaning methods, warning regarding conditions and restrictions of use should be given. For example, wet methods are applicable only where ducts are sufficiently moisture-tight, internal surfaces are smooth, and slope and drainage arrangements have been provided so that fluid and contaminant can be evacuated.

A sufficient number of access/cleaning doors shall be provided in the ductwork. Additionally, special care shall be taken regarding obstacles to cleaning such as dampers, sound attenuators which are mounted in the ducts. In many cases additional cleaning doors are needed after or before such obstacle. Requirements for location of and distance between access doors are presented in EN 12097 and EN 16798-3.

5.4 Determination of cleaning interval

The cleaning interval shall be defined by reference to the cleanliness or dirtiness of the system. Cleanliness or dirtiness shall in the first instance be assessed visually and this may be confirmed by means of measurement, see Annex A.

The inspection interval to determine the need for cleaning be defined in the system documentation in order to assist with maintenance planning or design considerations related to cleaning methods.

5.5 Assessment of the cleanliness level after cleaning

Methods for assessment of the cleanliness level before cleaning also be applied after cleaning.

The preferred methods for assessment of the cleanliness level after cleaning are given in Annex A.

6 Methodology

6.1 General

Clause 6 refers to ducted ventilation, for air ventilation systems. See Annex J for kitchen extract systems.

Figure 1 presents a procedure to control and maintain cleanliness of ventilation system. It does not include the design stages or selection and specification of the system, or any of its components.

The system shall be first checked visually, both in assessing the need for cleaning and in verification of the result of cleaning. Measurements are needed if the visual inspection results in disagreement or uncertainty about cleanliness or need for cleaning, see Figure 1.

Objective measurements can be defined in advance as part of the cleaning or inspection plan.

NOTE REHVA Guideline and national guidelines like VDI 6022 and FiSIAQ Guideline give more detailed guidance on product selection and specification of aspects of hygiene.

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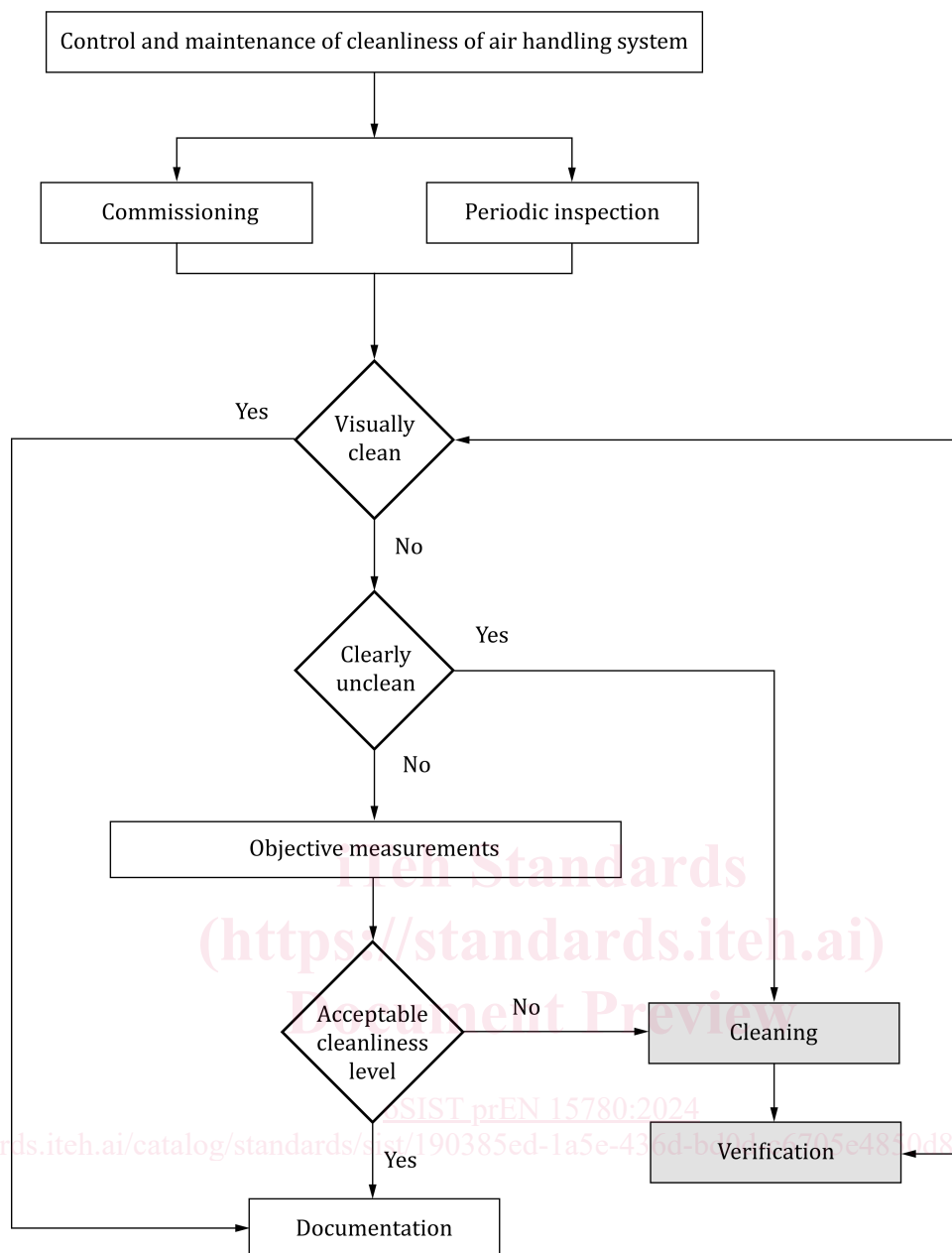


Figure 1 — Schematic flow chart for procedures to maintain cleanliness of ventilation system

If the components are certified for cleanliness or the cleanliness after production is otherwise verified, and if the cleanliness instructions are properly documented, the commissioning may be reduced to checking the documentation and random checking of the system cleanliness (compliance with the documentation), see 6.2.2.

The methods applied for objective measurements and verifications shall be consistent so that the result of inspection is acceptable and give reliable grounds for decision making for cleaning work of the system when needed. Verification after cleaning is needed for quality control of the cleaning work, and to verify the cleaning result.

NOTE An example of acceptable levels of cleanliness (or dirtiness) is explained in Annex G.