



# SLOVENSKI STANDARD SIST EN 12097:2007

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Ventilation for Buildings - Ductwork - Requirements for ductwork components to facilitate maintenance of ductwork systems

Lüftung von Gebäuden - Luftleitungen - Anforderungen an Luftleitungsbauteile zur  
Wartung von Luftleitungssystemen

Ventilation des bâtiments - Réseau de conduits - Exigences relatives aux composants destinés a faciliter l'entretien des réseaux de conduits

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Ta slovenski standard je istoveten z: EN 12097:2006

**ICS:**

91.140.30 Ú!^: !æ^çæ) äq Á|ã æ \ã Ventilation and air-conditioning  
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English Version

## Ventilation for Buildings - Ductwork - Requirements for ductwork components to facilitate maintenance of ductwork systems

Ventilation des bâtiments - Réseau de conduits - Exigences relatives aux composants destinés à faciliter l'entretien des réseaux de conduits

Lüftung von Gebäuden - Luftleitungen - Anforderungen an Luftleitungsbauteile zur Wartung von Luftleitungssystemen

This European Standard was approved by CEN on 1 August 2006.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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## Foreword

This document (EN 12097:2006) has been prepared by Technical Committee CEN/TC 156 "Ventilation for buildings", the secretariat of which is held by BSI.

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 March 2007, and conflicting national standards shall be withdrawn at the latest by March 2007.

This document supersedes ENV 12097:1997

The standard is one of a series of standards for ductwork used for ventilation and air conditioning of buildings for human occupancy.

The position of this standard in the field of mechanical services is shown in Figure N° 1.

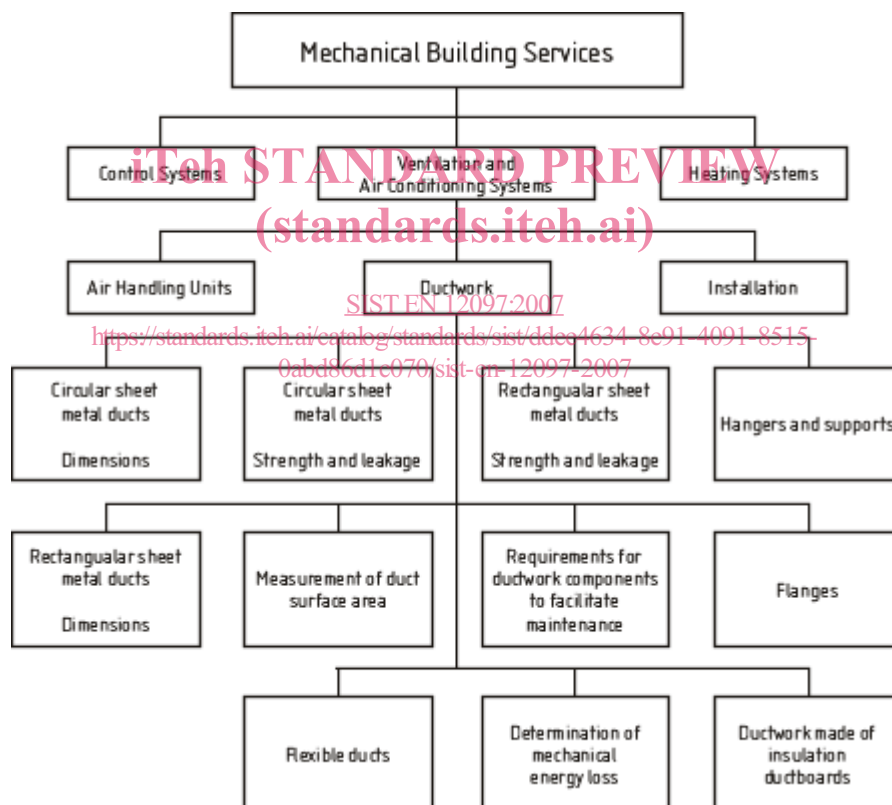


Figure 1 — Position of EN 12097 in the field of mechanical building services

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## 1 Scope

This European standard specifies requirements for dimension, shape and location for access panels for cleaning and service in ductwork systems, which conform to EN 1505, EN 1506 and EN 13180.

National regulations shall always be followed, even when they deviate from requirements given in this standard.

## 2 Normative references

The following referenced documents are indispensable for the application 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 1506, *Ventilation for buildings — Sheet metal air ducts and fittings with circular cross-section — Dimensions*

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

EN 12236, *Ventilation for buildings — Ductwork hangers and supports — Requirements for strength*

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

EN 12792:2003, *Ventilation for buildings — Symbols, terminology and graphical symbols*

EN 13180, *Ventilation for buildings — Ductwork — Dimensions and mechanical requirements for flexible ducts*

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EN 13779, *Ventilation for non-residential buildings — Performance requirements for ventilation and room-conditioning systems*

### 3 Definition and symbols

For the purposes of this document the terms definitions given in EN 12792:2003 and the following apply.

#### 3.1 Access panel

permanent duct component intended to permit access into ducts for inspection and maintenance. An access panel according to this standard can be opened and closed repeatedly, without cutting or damaging the duct. Refer to “Door and inspection panel” in EN 12792

### 4 Requirements

#### 4.1 General

The air distribution system shall be designed, manufactured and installed in such a way that cleaning of internal surfaces and components is possible.

The design and installation documentation shall indicate by dimensions, the location of all access components and provide details of the size and type of component required. The documentation shall also indicate the location of the components mentioned in 4.3 to enable proper service and re-adjustment.

The cleaning method may vary depending on the category of the air distribution system. The arrangements for cleaning depend on the category of air system, as specified in EN 13779. This category influences the frequency of access covers, the method for cleaning and the cleaning intervals.

All equipment or components inside the ductwork that inhibits cleaning shall be avoided. Stiffeners, or other equipment necessary inside the ducts shall be smooth.

Sufficient free space shall be provided around the ductwork so that cleaning operations can be carried out without obstruction.

The requirements for the strength and air tightness of ducts equipped with access components shall conform to those for the whole ductwork, as specified in EN 12237 and in EN 1507.

The requirements for strength of ductwork hangers and supports shall conform to EN 12236.

For ductwork in dimensions unsuited for mechanized cleaning and where human access is needed, the type and location of access components shall allow the cleaning person to safely and without hindrance enter and exit from the ducts.

#### 4.2 Openings

##### 4.2.1 General

Covers, access panels and doors shall be easy to open.

All access components shall be constructed and installed to match the performance, including air tightness and strength, of the system and facilitate the cleaning process.

In ductwork where thermal, acoustic or fire insulation is specified, the design documentation shall define how the insulation value is maintained across the opening. Access components shall be constructed and installed in the ductwork such that the integrity of the thermal, acoustic or fire insulation is maintained.

A duct-mounted component, which may be dismantled for cleaning may also be regarded as an opening, provided it fulfils the requirements stated for openings.

**4.2.2 Installation and location of openings**

Consideration shall be given to the security of access panels and doors installed in public areas. Detachable access panels and doors shall be secured to prevent them from causing injury or falling into the duct.

Access components shall be provided to ensure that the whole ductwork system can be cleaned (see 4.4).

Unobstructed access to the access panels of the ducts shall be provided. See annex A.

**4.2.3 Dimensions**

**4.2.3.1 General**

Unless cleaning conditions are specified in technical agreement, the dimensions shall conform to 4.2.3.2 and 4.2.3.4.

Openings could reduce the stability of ducts. This should be prevented by an adequate fixing.

**4.2.3.2 Openings for rigid circular ducts**

For cleaning access, the ducts shall be provided either with openings of sizes according to Table 1 and Figure 2 or T-pieces with removable end caps with a minimum nominal diameter (EN 1506) according to Table 1 and Figure 2.

**Table 1 — Access panels in circular ducts, minimum dimensions**

Rectangular or oval opening		Branch/T-piece + end cap with minimum diameter	
Duct diameter nominal (mm) D	Minimum dimensions of openings in duct walls (mm) A x B	Duct diameter, nominal (mm) D <sup>a)</sup>	Nominal EN 1506 male dimension or minimum opening (mm) d
100 ≤ D < 200	180 x 80	100	100
200 ≤ D ≤ 315	200 x 100	125	100
315 < D ≤ 500	300 x 200	160	125
500 < D	400 x 300	200	160
		250	200
		315	250
		400	315
		500	400
		≥ 630	500

<sup>a)</sup> For additional sizes the requirements of the nearest larger nominal size apply.



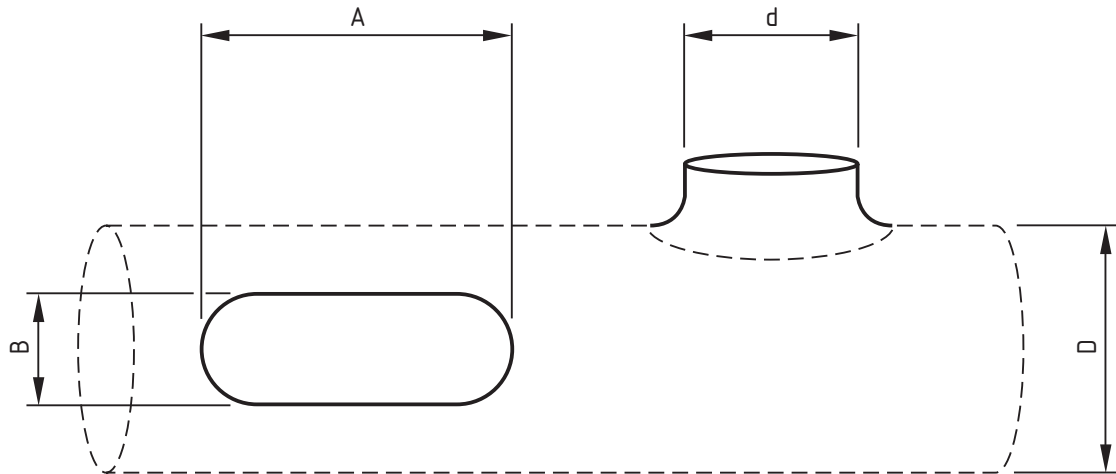


Figure 2 – Openings for rigid circular ducts

#### 4.2.3.3 Openings for flexible circular ducts

Flexible ducts shall, where possible, be removed for inspection and cleaning, unless they can be satisfactorily cleaned in situ. For cleaning of flexible ductwork in situ, access shall be provided through rigid access components.

#### 4.2.3.4 Openings for rectangular ducts

For cleaning access the ducts shall be provided either with openings of sizes according to Table 2 and Figure 3 or T-pieces with removable end caps with a minimum nominal diameter (EN 1506) according to Table 2 and Figure 3.

Table 2 — Access panels in rectangular ducts, minimum dimensions

Rectangular or oval opening		Branch/T-piece + end cap with minimum diameter	
Width S of duct side where access panel is installed (mm)	Minimum dimensions of openings in duct walls (mm) A x B	Width S of duct side where access panel is installed (mm)	Nominal EN1506 male dimension or minimum opening (mm) d
$S \leq 200$	300 x 100	$\leq 200$	125
$200 < S \leq 500$	400 x 200	$\leq 250$	160
$500 < S$	500 x 400	$\leq 300$	200
		$\leq 350$	250
		$\leq 450$	315
		$\leq 630$	400
		$> 630$	500