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AMENDMENT 1
2023-11

**Heat recovery ventilators and energy
recovery ventilators — Method of test
for performance —**

Part 1:

**Development of metrics for evaluation
of energy related performance**

AMENDMENT 1

*Ventilateurs-récupérateurs de chaleur et ventilateurs-récupérateurs
d'énergie — Méthode d'essai des performances —*

*Partie 1: Développement de paramètres pour l'évaluation des
performances énergétiques*

AMENDEMENT 1



Reference number
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This document was prepared by Technical Committee ISO/TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 6, *Testing and rating of air-conditioners and heat pumps*.

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Heat recovery ventilators and energy recovery ventilators — Method of test for performance —

Part 1:

Development of metrics for evaluation of energy related performance

AMENDMENT 1

3.6

Replace Note 1 to entry with the following:

Note 1 to entry: Indicated in Figure 1 as key 3.

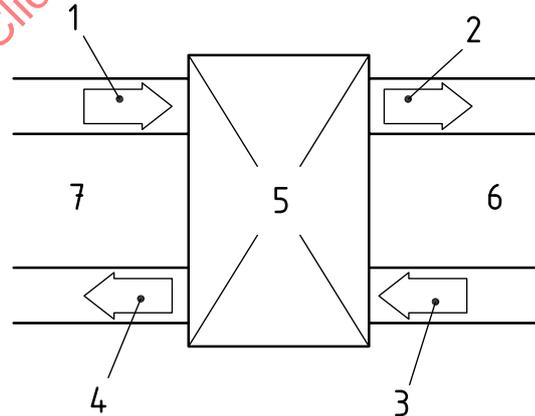
3.7

Replace Note 1 to entry with the following:

Note 1 to entry: Indicated in Figure 1 as key 1.

Figure 1

Replace Figure 1 with the following:



Key

- | | | | |
|---|--|---|--------------|
| 1 | entering supply air (OA) and/or station 1 | 5 | ventilator |
| 2 | leaving supply air (SA) and/or station 2 | 6 | indoor side |
| 3 | entering exhaust air (RA) and/or station 3 | 7 | outdoor side |
| 4 | leaving exhaust air (EA) and/or station 4 | | |

Figure 1 — Schematic numbering of airflows for heat and energy recovery ventilators

3.14

Replace Note 1 to entry with the following:

Note 1 to entry: Indicated in Figure 1 as key 4.

3.15

Replace Note 1 to entry with the following:

Note 1 to entry: Indicated in Figure 1 as key 2.

3.26

Replace Note 1 to entry with the following:

Note 1 to entry: Indicated in Figure 1 as keys 1, 2, 3 and 4.

8.2, Table 1

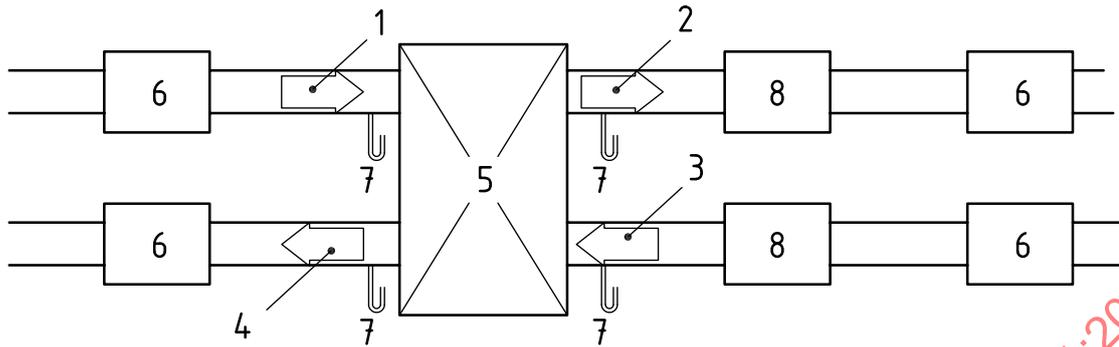
Replace Table 1 with the following:

Table 1 — Conditions of test for coefficient of energy and effective work test (cooling)

Parameter		Standard test conditions				
		T1	T2	T3	T4	T8
Temperature of entering supply air (°C)	dry bulb	35				
	wet bulb	23	24	31	24	24
Temperature of entering exhaust air (°C)	dry bulb	21	24	27	27	25
	wet bulb	15	17	20	19	18
NOTE 1 Allowable variation of readings are given in Table F.2.						
NOTE 2 T8 is new condition.						

Annex A, Figure A.1

Replace Figure A.1 with the following:



Key

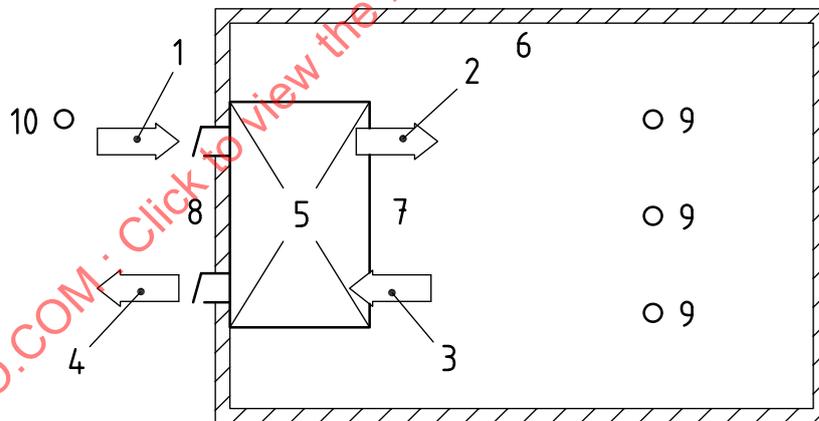
- | | |
|--|---------------------------------------|
| 1 entering supply air (OA) and/or station 1 | 5 ventilator |
| 2 leaving supply air (SA) and/or station 2 | 6 static pressure control apparatus |
| 3 entering exhaust air (RA) and/or station 3 | 7 static pressure measuring apparatus |
| 4 leaving exhaust air (EA) and/or station 4 | 8 airflow measuring apparatus |

Simultaneous measurement of supply and exhaust airflow is preferred. However, at least one airflow measuring apparatus shall be in use as per 6.2.2.5.

Figure A.1 — Arrangement for airflow measurement

B.1.4, Figure B.1

Replace Figure B.1 with the following:



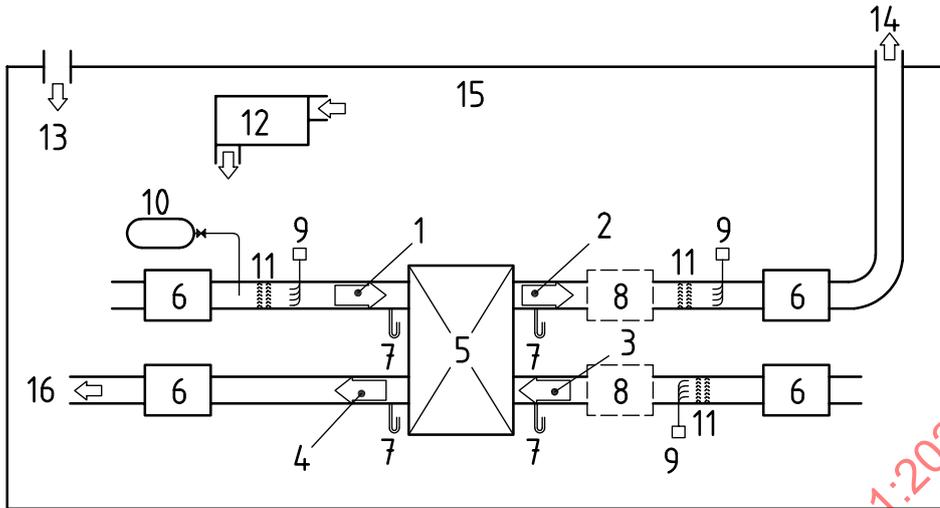
Key

- | | |
|--|---------------------------|
| 1 entering supply air (OA) and/or station 1 | 6 test chamber |
| 2 leaving supply air (SA) and/or station 2 | 7 indoor side |
| 3 entering exhaust air (RA) and/or station 3 | 8 outdoor side |
| 4 leaving exhaust air (EA) and/or station 4 | 9 indoor sampling pipes |
| 5 ventilator | 10 outdoor sampling pipes |

Figure B.1 — Basic measurement principle for sample measurement equipment setup (decay method) for net supply airflow measurement of unducted units

C.3.2.3, Figure C.1

Replace Figure C.1 with the following:



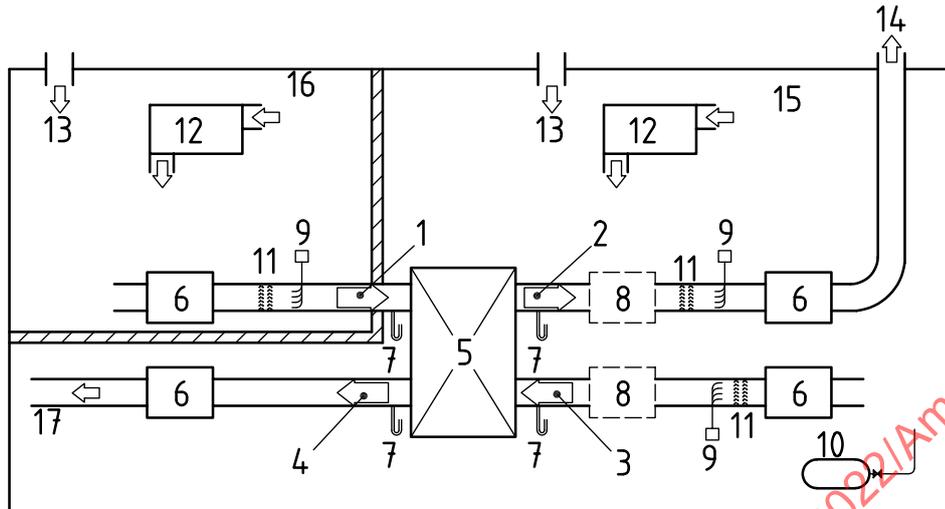
Key

- | | |
|--|-------------------------------|
| 1 entering supply air (OA) and/or station 1 | 9 tracer gas sampler |
| 2 leaving supply air (SA) and/or station 2 | 10 tracer gas source |
| 3 entering exhaust air (RA) and/or station 3 | 11 air mixer |
| 4 leaving exhaust air (EA) and/or station 4 | 12 air conditioning apparatus |
| 5 ventilator | 13 make up air inlet |
| 6 static pressure control apparatus | 14 supply air outlet |
| 7 static pressure measuring apparatus | 15 test facility |
| 8 airflow measuring apparatus | 16 exhaust air outlet |

Figure C.1 — Basic measurement principle schematic for ducted $R_{U,EA,TR}$ measurement system for ventilators intended for installation in a conditioned space

C.3.3.3, Figure C.2

Replace Figure C.2 with the following:



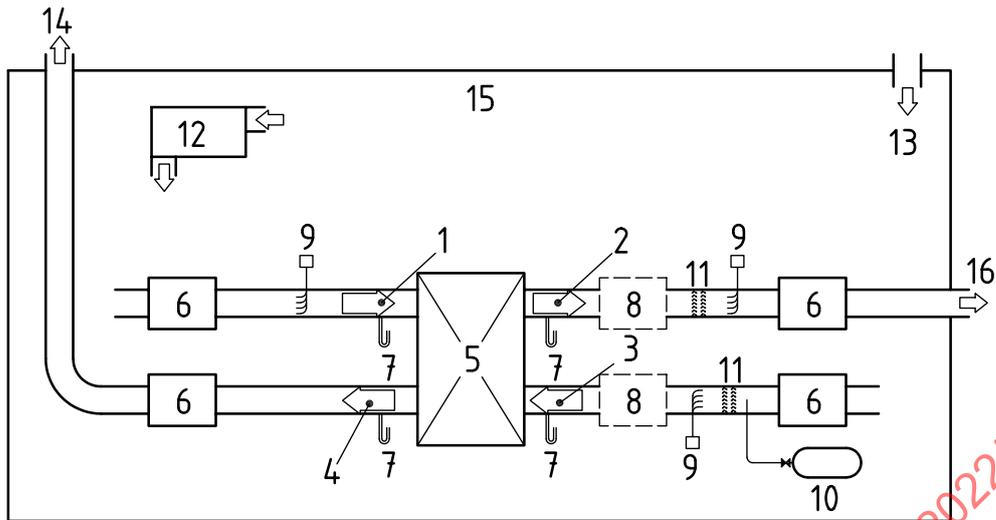
Key

- | | |
|--|-------------------------------|
| 1 entering supply air (OA) and/or station 1 | 10 tracer gas source |
| 2 leaving supply air (SA) and/or station 2 | 11 air mixer |
| 3 entering exhaust air (RA) and/or station 3 | 12 air conditioning apparatus |
| 4 leaving exhaust air (EA) and/or station 4 | 13 make up air inlet |
| 5 ventilator | 14 supply air outlet |
| 6 static pressure control apparatus | 15 "indoor" test facility |
| 7 static pressure measuring apparatus | 16 "outdoor" test facility |
| 8 airflow measuring apparatus | 17 exhaust air outlet |
| 9 tracer gas sampler | |

Figure C.2 — Basic measurement principle schematic for two-room R_{UEATR} measurement system for ventilators intended for installation in a conditioned space, with tracer gas introduced into "Indoor" chamber

C.4.4, Figure C.3

Replace Figure C.3 with the following:



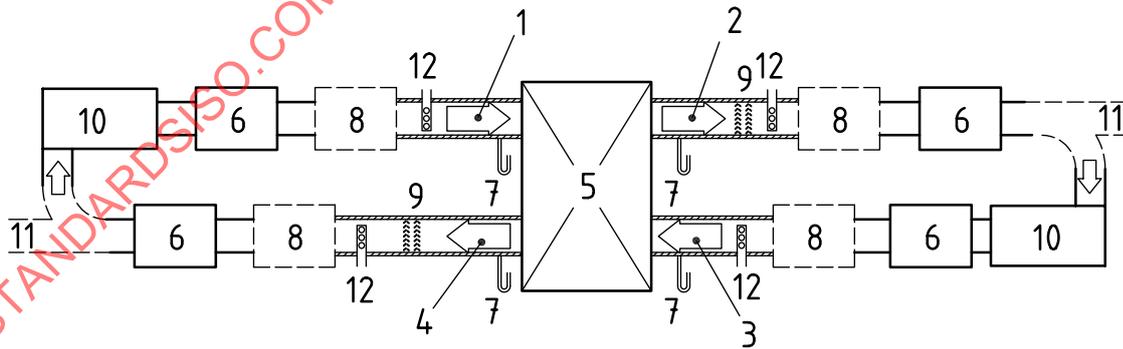
Key

- | | |
|--|-------------------------------|
| 1 entering supply air (OA) and/or station 1 | 9 tracer gas sampler |
| 2 leaving supply air (SA) and/or station 2 | 10 tracer gas source |
| 3 entering exhaust air (RA) and/or station 3 | 11 air mixer |
| 4 leaving exhaust air (EA) and/or station 4 | 12 air conditioning apparatus |
| 5 ventilator | 13 make up air inlet |
| 6 static pressure control apparatus | 14 exhaust air outlet |
| 7 static pressure measuring apparatus | 15 test facility |
| 8 airflow measuring apparatus | 16 supply air outlet |

Figure C.3 — Basic measurement principle schematic for ducted R_{UEATR} measurement system for ventilators intended for installation outdoors

D.1.6, Figures D.1, D.2 and D.3

Replace Figures D.1, D.2 and D.3 with the following:



Key

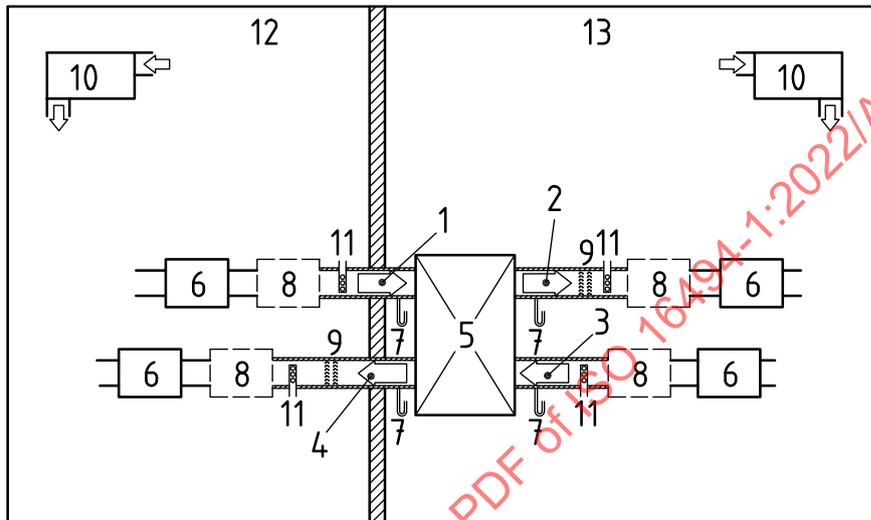
- | | |
|--|---------------------------------------|
| 1 entering supply air (OA) and/or station 1 | 7 static pressure measuring apparatus |
| 2 leaving supply air (SA) and/or station 2 | 8 airflow measuring apparatus |
| 3 entering exhaust air (RA) and/or station 3 | 9 air mixer |
| 4 leaving exhaust air (EA) and/or station 4 | 10 air conditioning apparatus |
| 5 ventilator | 11 relief inlet/outlet |

6 static pressure control apparatus

12 temperature and humidity measuring instrument

NOTE Airflow measurement devices are optional. Temperature and humidity measurement and mixing station at station 4 (EA) are optional.

Figure D.1 — Basic measurement principle schematic for ducted thermal performance measurement setup



Key

- 1 entering supply air (OA) and/or station 1
- 2 leaving supply air (SA) and/or station 2
- 3 entering exhaust air (RA) and/or station 3
- 4 leaving exhaust air (EA) and/or station 4
- 5 ventilator
- 6 static pressure control apparatus
- 7 static pressure measuring apparatus

- 8 airflow measuring apparatus
- 9 air mixer
- 10 air conditioning apparatus
- 11 temperature and humidity measuring instrument
- 12 "outdoor" test facility
- 13 "indoor" test facility

NOTE Airflow measurement devices are optional. Mixing station and temperature and humidity measurement at station 4 (EA) are optional.

Figure D.2 — Basic measurement principle schematic for two-rooms thermal performance measurement for ventilators intended for installation in a conditioned space