

DIN 4719:2009-07 (E)

Ventilation and air conditioning - Requirements, performance testing and labelling

Contents		Page
Foreword		6
1	Scope	7
2	Normative references	7
3	Terms	9
4	Components/products and ventilation units for ventilation systems for dwellings	11
4.1	General	11
4.2	General requirements	11
4.3	Stricter requirements	12
5	Performance criteria for components/products and ventilation devices	12
5.1	General requirements	12
5.1.1	General	12
5.1.2	Materials and filters	12
5.1.3	Design	13
5.1.4	Accessories and equipment	13
5.1.5	Operation and maintenance	13
5.1.6	Extract ventilation systems; system-related requirements	13
5.1.7	Supply and extract ventilation systems; system-related requirements	14
5.2	Stricter requirements - "H devices"	14
5.2.1	General	14
5.2.2	Materials and filters	15
5.2.3	Design	16
5.2.4	Accessories and equipment	16
5.2.5	Operation and maintenance	16
5.2.6	Extract ventilation systems; system-related requirements	16
5.2.7	Supply and extract ventilation systems; system-related requirements	17
5.3	Stricter requirements - "E devices"	18
5.3.1	General	18
5.3.2	Materials and filters	19
5.3.3	Design	19
5.3.4	Accessories and equipment	19
5.3.5	Operation and maintenance	19
5.3.6	Extract ventilation systems; system-related requirements	20
5.3.7	Supply and extract ventilation systems; system-related requirements	21
5.4	Stricter requirements - "S devices"	22
5.4.1	General	22
5.4.2	Materials and filters	23
5.4.3	Design	23
5.4.4	Accessories and equipment	23
5.4.5	Operation and maintenance	23
5.4.6	Extract ventilation systems; system-related requirements	23
5.4.7	Supply and extract ventilation systems; system-related requirements	23
5.5	Requirements - "non-return dampers"	24
5.5.1	General	24
5.5.2	Materials and filters	24
5.5.3	Design	24
5.5.4	Accessories and equipment	24
5.5.5	Operation and maintenance	24

5.5.6	Extract ventilation systems; system-related requirements on ventilation units	24
5.5.7	Supply and extract ventilation systems; system-related requirements on ventilation units	24
5.5.8	Non-return dampers; system-related requirements	25
5.6	Stricter requirements - "F devices"	25
5.6.1	General	25
5.6.2	Materials and filters	25
5.6.3	Design	25
5.6.4	Accessories and equipment	25
5.6.5	Operation and maintenance	25
5.6.6	Extract ventilation systems; system-related requirements	25
5.6.7	Supply and extract ventilation systems; system-related requirements	26
5.6.8	F devices (ventilation unit in trouble-free operating condition)	26
6	Test procedures	26
6.1	Performance tests, general	26
6.2	H device performance tests	27
6.2.1	General	27
6.2.2	Test specimens	27
6.2.3	Test facilities	27
6.2.4	Test procedure	27
6.2.5	Test and inspection results	27
6.3	E device performance tests	27
6.3.1	General	27
6.3.2	Test specimens	27
6.3.3	Test facilities	27
6.3.4	Test procedure	28
6.3.5	Test results	29
6.4	S device performance tests	29
6.4.1	General	29
6.4.2	Test specimens	29
6.4.3	Test facilities	29
6.4.4	Test procedure	29
6.4.5	Test results	29
6.5	Non-return damper performance tests	29
6.5.1	General	29
6.5.2	Test specimens	29
6.5.3	Test facilities	30
6.5.4	Test procedure	30
6.5.5	Test results	30
6.6	F device performance tests	30
7	Labelling of components/products and ventilation units	30
7.1	Labelling, general	30
7.2	Labelling, H devices	30
7.3	Labelling, E devices	30
7.4	Labelling, S devices	31
7.5	Labelling, non-return dampers	31
7.6	Labelling, F devices	31
7.7	Examples of supplementary labelling	31
8	Product information on components/products and ventilation devices	31
8.1	Product information, general	31
8.2	Product information, H device	31
8.3	Product information, E device	31
8.4	Product information, S device	32
8.5	Product information, non-return damper	32
8.6	Product information, F device	32
Annex A (informative)	Components/products and ventilation units for a ventilation system	33
A.1	General	33

A.2	Extract ventilation systems	35
A.2.1	Extract ventilation system with a single fan (example for single-family dwelling, can also be installed in individual apartments)	35
A.2.2	Extract ventilation system with central fan (for apartment building, single-family dwelling or individual apartment)	36
A.3	Supply and extract ventilation systems	37
A.3.1	Supply and extract ventilation system with single-dwelling ventilation unit (example for single-family dwellings)	37
A.3.2	Supply and extract ventilation system with single-dwelling ventilation units (example for apartment buildings)	39
Annex B (normative)	Ventilation units in accordance with DIN EN 13141-4, DIN EN 13141-7 and DIN EN 13141-8	40
B.1	General requirements -- performance criteria and test procedures	40
B.2	Stricter requirements -- performance criteria and test procedures	41
Annex C (normative)	Ventilation units in accordance with DIN EN 13141-7, DIN EN 13141-8 and fans in accordance with DIN EN 13141-4	53
C.1	General requirements	53
C.2	Test procedures and test facilities	53
C.2.1	Extract ventilation systems; system-related requirements	53
C.2.2	Supply and extract ventilation systems; system-related requirements	54
Annex D (normative)	Hygiene criteria for "H" ventilation units	56
D.1	Stricter requirements - H device	56
D.1.1	Performance criteria and how they are verified	56
D.1.2	Labelling	56
D.2	Test procedures and test facilities	57
D.2.1	Extract ventilation systems; system-related requirements	57
D.2.2	Supply and extract ventilation systems; system-related requirements	57
Annex E (normative)	Energy efficiency criteria for "E" ventilation units	58
E.1	Stricter requirements for E devices -- DIN EN 13141-4	58
E.1.1	Performance criteria and how they are verified	58
E.1.2	Labelling	58
E.1.3	Energy-efficiency parameters	59
E.1.4	Energy-efficiency parameters	60
E.2	Test and inspection procedures and test facilities	61
E.2.1	Extract ventilation systems; system-related requirements	61
E.2.2	Supply and extract ventilation systems; system-related requirements	62
E.2.3	Boundary conditions for determining energy-efficiency parameters	64
E.3	Defining equations for determining the energy-efficiency parameters of a ventilation unit	65
E.3.1	Ventilation system with heat exchanger - air/air	65
E.3.2	Ventilation system with heat pump, considered as an integral unit - air/air	65
E.3.3	Ventilation system with heat pump, considered as an integral unit - air/water	66
E.3.4	Ventilation system with heat pump, considered as individual components	66
E.3.5	Ventilation system with sensor-controlled air flow rate	67
Annex F (normative)	Acoustic criteria for "S" ventilation units	68
F.1	Stricter requirements for an S device	68
F.1.1	Performance criteria and how they are verified	68
F.1.2	Labelling	68
F.2	Test procedures and test facilities	68
F.2.1	Extract ventilation systems; system-related requirements	68
F.2.2	Supply and extract ventilation systems; system-related requirements	69

Annex G (normative) Non-return damper - "RK" ventilation unit connected to common main duct ..	70
G.1 Requirements for assigning the "RK" qualification	70
G.1.1 Performance criteria and how they are verified	70
G.1.2 Labelling	70
G.2 Test procedures and test facilities	70
G.2.1 Non-return dampers; system-related requirements	70
G.2.2 Extract ventilation systems; system-related requirements on ventilation units	71
G.2.3 Supply and extract ventilation systems; system-related requirements on ventilation units	71
Annex H (normative) Operation with combustion heating appliances, safety equipment	72
H.1 Stricter requirements for F devices -- performance criteria and test and inspection procedures	72
H.2 Test procedures and facilities for extract ventilation system and supply and extract ventilation systems	72
Bibliography	73