

ISO 16494:2014-11 (E)

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

Contents		Page
Foreword		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols and abbreviated terms	5
5	Airflow test	6
5.1	General conditions	6
5.2	Ducted heat recovery ventilators and energy recovery ventilators	6
5.3	Unducted heat recovery ventilators and energy recovery ventilators	9
6	Tracer gas tests	9
6.1	General conditions	9
6.2	Temperature conditions	9
6.3	Preconditions	9
6.4	Airflow conditions	9
6.5	Unit operating voltage and frequency	9
6.6	Tracer gas measurement methods	9
7	Determination of efficiency	10
7.1	General conditions	10
7.2	Temperature and humidity conditions: inlets to ventilator	10
7.3	Preconditions	10
7.4	Airflow conditions	10
7.5	Static pressure conditions: ducted heat and energy recovery ventilators	11
7.6	Static pressure conditions: unducted heat and energy recovery ventilators	11
7.7	Unit operating voltage and frequency	11
7.8	Thermal performance measurement	11
8	Performance calculations	11
8.1	Performance calculations: ducted ventilators	11
8.2	Performance calculations: unducted ventilators	11
8.3	Unit Exhaust Air Transfer Ratio (UEATR)	11
8.4	Net supply airflow	12
8.5	Gross effectiveness	13
8.6	Coefficient of energy (COE)	14
8.7	Effective work (EW)	15
9	Test results	16
Annex A (normative) Airflow measurement method for both ducted and unducted ventilators		17
Annex B (normative) Decay method for measurement of net supply airflow		19
Annex C (normative) Unit exhaust air transfer ratio measurement methods		21
Annex D (normative) Thermal performance measurement		25

Annex E (informative) Example data collection and reporting sheets	28
Annex F (normative) Required instrument uncertainty	36
Annex G (informative) Construction of plenums for connection to inlets or outlets not designed for connection of ductwork	37
Bibliography	38