

# DIN EN 16798-9:2017-11 (E)

## Energy performance of buildings - Ventilation for buildings - Part 9: Calculation methods for energy requirements of cooling systems (Modules M4-1, M4-4, M4-9) - General

---

<b>Contents</b>		<b>Page</b>
European foreword .....		4
Introduction .....		7
<b>1</b>	<b>Scope .....</b>	<b>9</b>
<b>2</b>	<b>Normative references .....</b>	<b>11</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>11</b>
<b>4</b>	<b>Symbols and subscripts .....</b>	<b>11</b>
<b>4.1</b>	<b>Symbols .....</b>	<b>11</b>
<b>4.2</b>	<b>Subscripts .....</b>	<b>12</b>
<b>5</b>	<b>Brief description of the methods .....</b>	<b>12</b>
<b>5.1</b>	<b>Output of the method .....</b>	<b>12</b>
<b>5.2</b>	<b>General description of the methods .....</b>	<b>13</b>
<b>5.3</b>	<b>Selection criteria between the methods .....</b>	<b>14</b>
<b>5.4</b>	<b>Required functionality of cooling system calculation methods .....</b>	<b>14</b>
<b>6</b>	<b>Calculation method 1 (simplified) .....</b>	<b>14</b>
<b>6.1</b>	<b>Output data .....</b>	<b>14</b>
<b>6.2</b>	<b>Calculation time interval and calculation period .....</b>	<b>16</b>
<b>6.2.1</b>	<b>Calculation interval .....</b>	<b>16</b>
<b>6.2.2</b>	<b>Calculation period .....</b>	<b>16</b>
<b>6.3</b>	<b>Input data .....</b>	<b>16</b>
<b>6.3.1</b>	<b>Source of data .....</b>	<b>16</b>
<b>6.3.2</b>	<b>Configuration and system design data .....</b>	<b>16</b>
<b>6.3.3</b>	<b>Operating or boundary conditions .....</b>	<b>18</b>
<b>6.4</b>	<b>Calculation procedure, method 1 .....</b>	<b>18</b>
<b>6.4.1</b>	<b>Applicable time intervals .....</b>	<b>18</b>
<b>6.4.2</b>	<b>Operating conditions calculation .....</b>	<b>19</b>
<b>6.4.3</b>	<b>Energy calculation .....</b>	<b>20</b>
<b>7</b>	<b>Calculation method 2 (detailed) .....</b>	<b>21</b>
<b>7.1</b>	<b>Output data .....</b>	<b>21</b>
<b>7.2</b>	<b>Calculation time interval and calculation period .....</b>	<b>23</b>
<b>7.2.1</b>	<b>Calculation interval .....</b>	<b>23</b>
<b>7.2.2</b>	<b>Calculation period .....</b>	<b>23</b>
<b>7.3</b>	<b>Input data .....</b>	<b>23</b>
<b>7.3.1</b>	<b>Source of data .....</b>	<b>23</b>
<b>7.3.2</b>	<b>Configuration and system design data .....</b>	<b>24</b>
<b>7.3.3</b>	<b>Operating or boundary conditions .....</b>	<b>26</b>
<b>7.3.4</b>	<b>Constants and physical data .....</b>	<b>27</b>
<b>7.4</b>	<b>Calculation procedure, method 2 .....</b>	<b>27</b>
<b>7.4.1</b>	<b>Applicable time intervals .....</b>	<b>27</b>
<b>7.4.2</b>	<b>Operating conditions calculation .....</b>	<b>27</b>
<b>7.4.3</b>	<b>Energy Calculation .....</b>	<b>29</b>

8	Energy performance expression .....	31
8.1	Annual efficiency of cooling system .....	31
8.2	Annual efficiency of cooling generation system .....	32
9	Quality control .....	32
10	Compliance check .....	32
Annex A (normative) Input and method selection data sheet -- Template .....		33
A.1	General .....	33
A.2	References .....	34
A.3	System design data .....	34
A.3.1	Default process design data choices .....	34
A.3.2	Default process control options .....	34
A.3.3	Factors for simplified distribution calculation .....	35
A.3.4	Energy weighting factors .....	35
Annex B (informative) Input and method selection data sheet -- Default choices .....		36
B.1	General .....	36
B.2	References .....	36
B.3	System design data .....	37
B.3.1	Default process design data choices .....	37
B.3.2	Default process control options .....	38
B.3.3	Default factors for simplified distribution calculation .....	38
B.3.4	Default energy weighting factors .....	38
Annex C (normative) System overview and required functionalities .....		39
Bibliography .....		42