

Code for Environmental Sustainability of Buildings

Addendum No. 1

Effective from 1 September 2014

Applicable to 1st Edition

This Addendum shall be read in conjunction with the Code for Environmental Sustainability of Buildings and shall form part of the Code.

Amendments to the Code

(1) Purpose of amendments

The purpose of the amendments is to allow alternative scoring methodology for meeting the criteria under 'RB 1-2 Dwelling Unit Indoor Comfort'.

(2) List of amendments

(a) Item 1-2(a)(i) under the 'RB 1-2 Dwelling Unit Indoor Comfort' in Table 4.1.7(a) on Page 8 of the Code shall be replaced as provided below. Changes are highlighted in blue.

Table 4.1.7(a) : Residential Building Criteria

Part 1 - Energy Efficiency	Green Mark Points								
<p><u>RB 1-2 Dwelling Unit Indoor Comfort</u></p> <p>Enhance dwelling unit indoor comfort either through the provision of better efficient air-conditioners or good natural ventilation design.</p> <p>(a)(i) Use of energy efficient air-conditioners that meet the prescribed energy performance standards.</p>	<p>Extent of Coverage : At least 90% of the air-conditioners used in all dwelling units</p> <p>Air-conditioners labelled with :</p> <p>Two Ticks – 2 points Three Ticks – 6 points Four Ticks – 12 points</p> <p>OR</p> <table border="1" data-bbox="855 1088 1391 1402"> <thead> <tr> <th data-bbox="855 1088 1203 1173">Coefficient of Performance (COP) range</th> <th data-bbox="1209 1088 1391 1173">Point Allocation</th> </tr> </thead> <tbody> <tr> <td data-bbox="855 1182 1203 1236">3.34 > Weighted COP ≥ 2.92</td> <td data-bbox="1209 1182 1391 1236">2</td> </tr> <tr> <td data-bbox="855 1245 1203 1317">COP_{100%} ≥ 3.06 & 3.76 > Weighted COP ≥ 3.34</td> <td data-bbox="1209 1245 1391 1317">6</td> </tr> <tr> <td data-bbox="855 1326 1203 1397">COP_{100%} ≥ 3.34 & Weighted COP ≥ 3.76</td> <td data-bbox="1209 1326 1391 1397">12</td> </tr> </tbody> </table>	Coefficient of Performance (COP) range	Point Allocation	3.34 > Weighted COP ≥ 2.92	2	COP _{100%} ≥ 3.06 & 3.76 > Weighted COP ≥ 3.34	6	COP _{100%} ≥ 3.34 & Weighted COP ≥ 3.76	12
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(b) Item 1-2(a)(i) under the 'RB 1-2 Dwelling Unit Indoor Comfort' on Page 38 of the Code shall be replaced as provided below. Changes are highlighted in blue.

RB 1-2 DWELLING UNIT INDOOR COMFORT

Requirements	<p><u>For development with provision of air-conditioners</u></p> <p>Extent of coverage : At least 90% of air-conditioners used in all dwelling units.</p> <p>1-2 (a)(i) Up to 12 points can be scored for the use of the air-conditioners that are certified under the Singapore Energy Labelling Scheme based on the following rating.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="background-color: #e0f7fa;">Rating</th> <th style="background-color: #e8f5e9;">Point Allocation</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">✓✓</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">✓✓✓</td> <td style="text-align: center;">6</td> </tr> <tr> <td style="text-align: center;">✓✓✓✓</td> <td style="text-align: center;">12</td> </tr> </tbody> </table> <p style="text-align: center; margin-top: 10px;">OR</p> <p>Up to 12 points can be scored for the provision of air-conditioning system with Coefficient of Performance (COP) that meet the prescribed energy performance standards stated in the following Table 1-2.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr style="background-color: #546e7a; color: white;"> <th colspan="2" style="text-align: center; padding: 5px;">Table 1-2 – Prescribed Energy Performance Standards for Air-Conditioning System</th> </tr> <tr> <th style="width: 70%; padding: 5px;">Coefficient of Performance (COP) range</th> <th style="width: 30%; padding: 5px;">Point Allocation</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;">3.34 > Weighted COP ≥ 2.92</td> <td style="text-align: center; padding: 5px;">2</td> </tr> <tr> <td style="text-align: center; padding: 5px;">COP_{100%} ≥ 3.06 & 3.76 > Weighted COP ≥ 3.34</td> <td style="text-align: center; padding: 5px;">6</td> </tr> <tr> <td style="text-align: center; padding: 5px;">COP_{100%} ≥ 3.34 & Weighted COP ≥ 3.76</td> <td style="text-align: center; padding: 5px;">12</td> </tr> </tbody> </table> <p>Notes :</p> <p>(1) Coefficient of Performance or COP refers to the ratio of the total cooling capacity expressed in Watts to the total effective input power expressed in Watts, and as specified in the test report.</p> <p>(2) Weighted COP refers to the sum of 0.4 × COP at full-load cooling capacity and 0.6 × COP at part-load cooling capacity i.e. Weighted COP = 0.4 x COP_{100%} + 0.6 x COP_{50%}</p>	Rating	Point Allocation	✓✓	2	✓✓✓	6	✓✓✓✓	12	Table 1-2 – Prescribed Energy Performance Standards for Air-Conditioning System		Coefficient of Performance (COP) range	Point Allocation	3.34 > Weighted COP ≥ 2.92	2	COP _{100%} ≥ 3.06 & 3.76 > Weighted COP ≥ 3.34	6	COP _{100%} ≥ 3.34 & Weighted COP ≥ 3.76	12
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(c) Documentary evidence requirements for Item 1-2(a)(i) under the 'RB 1-2 Dwelling Unit Indoor Comfort' on Page 41 of the Code shall be replaced as provided below. Changes are highlighted in blue.

Documentary Evidences	<p><u>For 1-2(a)(i) – For dwelling units with provision of air-conditioners</u></p> <ul style="list-style-type: none">• Extracts of the tender specification showing the types of air-conditioners provided for all dwelling units of the development;• Technical product information and schedule of air-conditioners showing the numbers, types and approved tick-rating as registered; and• Testing report endorsed by the testing laboratory showing the results of tests carried out in accordance with applicable test standards as prescribed in the Energy Conservation (Energy Labelling and Minimum Performance Standards for Registrable Goods) Regulation.
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