Amendments to the Explanatory Notes to the Code of Practice on Wind Effects in Hong Kong 2019 (December 2023)

Legends:

Amended

Deleted

(12/2023)

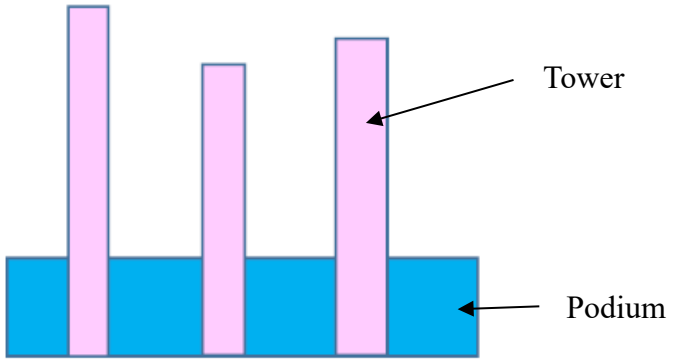
Amendments to the Explanatory Notes to the Code of Practice on Wind Effects in Hong Kong 2019 in December 2023 included:

(a) Clause 2.2.3 – Addition of guidelines for determination of fundamental frequency for assessing across wind effects;

(b) Clause 2.5 – Addition of design net pressure for hoarding and covered walkway associated with construction site; and

(c) Clause 4.3.1, Clause 6.4, Figure B-1, Appendices C2 and E3.1 – Textual refinement.

Amendments to the Explanatory Notes to the Code of Practice on Wind Effects in Hong Kong 2019

Item	Current version	Amendments
1. Clause 2.2.3	Last paragraph – According to a parametric study with selected parameters, assuming natural periods of $H/46$ in both directions, for buildings which satisfy $H/min(B,D)<5$, $H<100$m and $N>0.5$Hz, the along-wind base moment is always larger than the across-wind base moment in the same direction, even with consideration of some level of uncertainty on the period estimation. Therefore checking of the across-wind base moment is not required when these conditions are met.	Last paragraph – According to a parametric study with selected parameters, assuming natural periods of $H/46$ in both directions, for buildings which satisfy $H/min(B,D)<5$, $H<100$m and $N>0.5$Hz, the along-wind base moment is always larger than the across-wind base moment in the same direction, even with consideration of some level of uncertainty on the period estimation. Therefore checking of the across-wind base moment is not required when these conditions are met. For multiple towers over a common podium, the fundamental frequency for estimation of across wind effects could be assessed by either one of the following assumptions: (a) assuming individual tower standing alone and extended to the building base without connecting to the podium; 

Item	Current version	Amendments
		(b) assuming individual tower integrated with the portion of the podium measured from structural wall/column edge of the modelled tower by not exceeding the minimum of 20m, three bays of the podium structure, and the middle line between the modelled tower and its nearby tower, subject to no substantial openings in floor slabs of the integrated portion of the podium. The effect of those floor openings might be considered separately; or (c) assuming individual tower integrated with the portion of the podium in conformity with the recognised engineering principles and engineering practices. Alternatively, if an integrated computer model of the towers and podium was set up, the dominant fundamental frequency of the mode of vibration mainly aligned with the across-wind direction of the respective towers obtained from the computer analysis could be adopted based on engineering justification. For cases where the tributary extent could not be clearly defined based on the above-mentioned criteria (b), an integrated computer model with all the towers and podium might be used to obtain the dominant fundamental frequency of the respective towers.

<table>
<tr><th>Item</th><th>Current version</th><th>Amendments</th></tr>
<tr><td>2. Clause 2.5</td><td>End of 2nd paragraph –
For designing hoarding and covered walkway associated with construction site, contractor shed, bamboo shed, tent or marquee that are not for residential use, wind pressures of not less than 37 per cent of the pressures given in the Code should be used.</td><td>End of 2nd paragraph –
For designing hoarding and covered walkway associated with construction site, contractor shed, bamboo shed, tent or marquee that are not for residential use, wind pressures of not less than 37 per cent of the pressures given in the Code should be used. In particular for hoarding and covered walkway associated with construction site, the design net pressure in Table 2-1 may be used.

Table 2-1 Design net pressure for hoarding and covered walkway associated with construction site
<table><tr><th>Height above ground level, Z(m)</th><th>Design Net Pressure (kPa) (all-inclusive value)</th></tr><tr><td>≤ 2.5</td><td>0.63</td></tr><tr><td>5</td><td>0.70</td></tr><tr><td>10</td><td>0.77</td></tr></table>Notes:
(a) For intermediate values of height, linear interpolation is permitted.
(b) Cp and Ss have been included.
(c) Beneficial effect due to self-weight of steel members may be considered.
(d) Topography factor should be considered in location where local topography may adversely affect wind effect.</td></tr>
<tr><td>3. Clause 4.3.1</td><td>Last paragraph –
However, the accidental dominant open scenario is out of scope of this Code, as discussed in Appendix B1.3.</td><td>Last paragraph –
However, the accidental dominant open scenario is not a compulsory requirement of this Code, as discussed in Appendix B1.3.</td></tr>
<tr><td>4. Clause 6.4</td><td>Last sentence of 2nd paragraph –
If a building removal investigation is not carried out, then the shelter benefit is limited to 80% of the along-wind value in accordance with the Code.</td><td>Last sentence of 2nd paragraph –
If a building removal investigation is not carried out, then the shelter benefit is limited to 80% of the loads of the Standard Method. The comparison should be in the form of total base moments.</td></tr>
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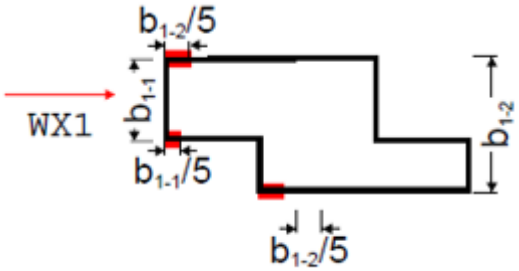
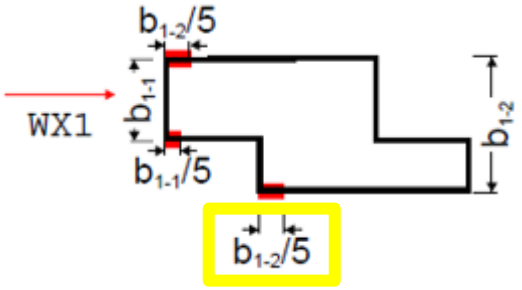
Item	Current version	Amendments
5. Figure B-1	Top left figure – 	Top left figure – 
6. Appendix C2	2nd paragraph – Outlying high damping value was recorded for a 200m building which was cubic.	2nd paragraph – Outlying high damping value was recorded for a 250m building which was cubic.
7. Appendix E3.1	The critical torsional load cases can be obtained by the following procedures: 1. For each tower, the loads on individual towers are calculated following the Code as shown in Figure E-7(a), (b) and (c). 2. Obtain the eight translational governed loads according to Section E2. In each subzones defined in Figure E-5, the resultant force ($F_{lateral-i}$) can be calculated by vector summation. For example, $F_{lateral-1}$ is the resultant force by F_{1-1}, F_{2-1} and F_{3-1}, as shown in Figure E-7(d). 3. For each $F_{lateral-i}$, the maximum projecting diagonal breadth B_i can be identified as shown in Figure E-7(e).	The critical torsional load cases can be obtained by the following procedures: 1. For each tower, the loads on individual towers are calculated following the Code as shown in Figure E-7(a), (b), (c) and (d). 2. Obtain the eight translational governed loads according to Section E2. In each subzones defined in Figure E-5, the resultant force ($F_{lateral-i}$) can be calculated by vector summation. For example, $F_{lateral-1}$ is the resultant force by F_{1-1}, F_{2-1}, F_{3-1} and F_{4-1}, as shown in Figure E-7(e). 3. For each $F_{lateral-i}$, the maximum projecting diagonal breadth B_i can be identified as shown in Figure E-7(f).