

**Amendments to the Code of Practice for
the Mandatory Building Inspection Scheme and the Mandatory Window Inspection Scheme 2012
15 September 2014**

Item	Clause	2012 Original Version	2014 Amendments	Remarks
1	After the 3 rd paragraph of Section 8	<p>The inspection shall cover all windows and glass louvers including window walls in individual private premises and common parts of the buildings.</p> <p>Curtain walls are subject to the MBIS and not the MWIS.</p>	<p>The inspection shall cover all windows and glass louvers including window walls in individual private premises and common parts of the buildings.</p> <p>Internal glass partitions and shopfront show windows at ground floor are not windows within the scope of prescribed inspection under the MWIS.</p> <p>Curtain walls are subject to the MBIS and not the MWIS.</p>	<ul style="list-style-type: none"> ■ To clarify the scope of the MWIS.
2	Section 10	As per Section 10 in 2012 version.	Replacement of Section 10 (2014 version) (4 pages).	<ul style="list-style-type: none"> ■ To clarify the definition of representative of QP. ■ To clarify methodology for inspection of window and actions to be taken in emergency situation.

Legends:

New/revise phrases


↓ Deleted phrases

Item	Clause	2012 Original Version	2014 Amendments	Remarks
				<ul style="list-style-type: none"> ■ To provide best practice of repair of window components not affecting safety e.g. weather sealant, weather gasket/strip, etc. ■ To provide guidelines for inspection of other common types of window.
3	Section 11	As per Section 11 in 2012 version.	Replacement of Section 11 (2014 version) (2 pages).	<ul style="list-style-type: none"> ■ To clarify mandatory requirements and standards for window repair under the MWIS. ■ To provide best practice of upgrading defective window components to current design and construction standard apart from meeting the standard under the MWIS. ■ To remove requirements for measures against bi-metallic action.

- The End -

Legends:

 New/revised phrases

 Deleted phrases

10. INSPECTION

The QP shall carry out window inspection personally if he is a natural person. Where the QP is a RGBC or RMWC registered in the name of a company, the window inspection shall be carried out personally by its Authorized Signatory as the representative of the QP as prescribed in the B(I&R)R. The inspection shall cover all window elements of openable sash and fixed panel.

Components of window elements shall be inspected from the interior of the subject building as far as practicable. Areas for attention in inspection and assessment of window are given in section 10.1 below. ↓

If emergency in relation to window safety is revealed during the inspection of windows, the QP shall advise the owners and occupants to take appropriate remedial action immediately and notify the BA.

Best Practice

Under the MWIS, all defective window components affecting window safety must be repaired or replaced. As for those window components not affecting safety e.g. weather sealant, weather gasket/strip, etc., they are not within the scope of prescribed inspection and repair under the MWIS. If the ageing of window gaskets affects the smooth operation of windows or even results in water leakage, the QP may advise the owner to have defective non-structural window components repaired in conjunction with the window repair. In this regard, the QP should advise the owner which items of repair are safety-related and therefore must be carried out under the MWIS and which are recommended repair items.

10.1 Areas for Attention in Inspection and Assessment of Window

Aluminium Framed Windows	
Components:	Possible Defects/Sign of Deterioration:
(a) Window frames and sashes;	1. Difficult to open or in jerky motion;

Legends:

New/revised phrases

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	2. Deformed or cannot be secured.
(b) Hinges;	1. Deformed or missing parts; 2. Seriously corroded.
(c) Rivets and screws;	1. Loosen or missing; 2. Greyish white powder or rust.
(d) Sliding tracks, shoes of sliding windows and window stays;	1. Deformed or missing; 2. Greyish white powder or rust.
(e) Lock set;	1. Loosen or missing; 2. Broken strap, jammed handle.
(f) Glass panes;	Broken or cracked.
(g) Glazing bead and gasket for supporting glass pane; and	Missing or defective.
(h) Other elements that may affect safety of the window.	

Steel/Iron Framed Windows	
Components:	Possible Defects/Sign of Deterioration:
(a) Window frames and sashes;	1. Difficult to open or in jerky motion; 2. Deformed or cannot be secured; 3. Rusty; 4. Flaking painting or exposed steel surface.
(b) Hinges;	1. Deformed or missing; 2. Seriously corroded.

Legends:

New/revised phrases

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(c) Screws;	1. Loosen or missing; 2. Corroded.
(d) Welds;	Cracked or seriously corroded.
(e) Lock set;	1. Loosen or missing; 2. Jammed handle.
(f) Glass panes;	Broken or cracked.
(g) Putty;	Missing or cracked.
(h) Sliding tracks, shoes of sliding windows and window stays; and	1. Deformed or missing; 2. Corroded or hard to move.
(i) Other elements that may affect safety of the window.	

Timber Framed Windows	
Components:	Possible Defects/Sign of Deterioration:
(a) Window frames and sashes;	1. Difficult to open or in jerky motion; 2. Deformed or cannot be secured; 3. Rotten; 4. Missing or damaged timber section; 5. Flaking painting or exposed timber surface.
(b) Hinges;	1. Deformed or missing; 2. Seriously corroded.
(c) Screws;	1. Loosen or missing; 2. Corroded.

Legends:

New/revised phrases

↓ Deleted phrases

(d) Lock set;	1. Loosen or missing; 2. Jammed handle.
(e) Glass panes;	Broken or cracked.
(f) Putty; and	Missing or cracked.
(g) Other elements that may affect safety of the window.	

Window Walls	
Components:	Possible Defects/Sign of Deterioration:
(a) Glass panes/fins;	Broken or cracked.
(b) Mullions and Transoms;	1. Seriously corroded; 2. Deformed or defective.
(c) Brackets / Spider fixing;	1. Loosen or missing; 2. Deformed or defective.
(d) Anchors, bolts, nuts, and screws;	1. Loosen or missing; 2. Corroded.
(e) Glazing bead and gasket for supporting glass pane;	Missing or defective.
(f) Structural sealant; and	1. Missing or defective; 2. Signs of deterioration or split such as change in color, wrinkle etc. N.B. QP may engage specialist to carry out the inspection and repair works for structural sealant.
(g) Other elements that may affect safety of the window.	

Legends:

New/revised phrases

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11. REPAIR

11.1 Mandatory Requirements

All windows shall be rendered safe after completion of repair works. ↓

All defective window components affecting window safety shall be repaired or replaced. The renewed components shall be of such material and size not inferior to that of the original design. Under normal circumstances, replacement of the whole window is not necessary if the window can be rendered safe by suitable repair.

The specified fire resistance capability of windows shall be maintained after rectification. For repair or replacement of windows in buildings or commercial premises under the jurisdiction of the FS(CP)O or FS(B)O, QP's attention is drawn to the requirements on fire resistance capability for windows as required thereunder.

11.2 Best Practice

Apart from meeting the prescribed repair standards stipulated under the Section 8 of the B(I&R)R, the QP may advise owner to consider replacing defective components with new components of such material and size complying with current design and construction standards.

If replacement of the whole window is necessary, QP shall comply with the BO and regulations and make reference to the relevant code of practice, technical guidelines, PNBI, PNAP and PNRC, wherever appropriate.

4-bar Hinges

4-bar hinge is more secure and shall be used as far as possible when the hinge is required to be replaced. It shall be of stainless steel with adjustable friction shoes, and all stainless steel bars of the hinge should preferably have a minimum thickness of 2.5mm.

Legends:

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Rivets and Screws

For better corrosion resistance, stainless steel rivets or screws shall be used to replace defective or missing rivets or screws. Stainless steel rivets shall be of 4.8mm diameter and stainless steel screws of 5mm diameter. ↓

When replacing a 4-bar hinge, sufficient anchorage shall be provided for the stainless steel rivet or screw to fasten the new hinge to the window frame and the openable sash. A positive mechanical fixing, for example, by inserting a stainless steel or hot dip galvanized steel plate or bar/angle of not less than 3mm thick inside the section to provide sufficient threads for the screws may be adopted.

As an alternative, the window sections for fixing the hinge may be thickened locally to not less than 5mm. When insertion of an extra piece of stainless steel or hot dip galvanized steel bar/angle inside the section or local thickening to 5mm is not adopted, the QP shall ensure that the thickness of the window frame and sash sections for fixing the 4-bar hinge can provide sufficient anchorage for the stainless steel rivet or screw.

Where the original rivet/screw holes have been enlarged due to corrosion, the QP shall consider adding stainless steel rivets or screws to the frame at proper positions in addition to the original to ensure safety.

Other Installation Requirements

Reference can be made to PNAP APP-116 for other installation requirements of aluminium windows ↓.

11.3 Regular Maintenance

Whilst the windows had been rendered safe after completion of the repair works, regular maintenance such as light lubrication of hinges and clearing of dust and dirt at hinges and tracks are required to maintain safety of the windows ↓. The QP shall advise the owners of the need for such regular maintenance.

Legends:

■ New/revISED phrases

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