



Window Replacement Requirements in Existing Buildings

Overview

This document summarises NZSPA's **minimum** requirements for window replacement in existing buildings. It takes into account New Zealand Building Code (NZBC) and NZSPA design requirements.

These minimum requirements apply to the replacement of windows in all existing buildings, including pre-fabricated and modular buildings. Compliance is mandatory for all window replacement in existing buildings starting after 1 December 2022.

Good natural ventilation is important to people's health, wellbeing and performance as it regulates the indoor environment by changing the air in the building through openings in the facades such as windows. Working, well-functioning and effective windows result in lower CO2 levels and provide a fresher and safer indoor environment.

NZSPA's minimum window requirements are designed to go beyond the minimum standards required by the NZBC to ensure that appropriate levels of ventilation and temperature control are provided to support good education outcomes in our learning spaces.

Minimum Window Replacement Requirements

Table 1 quantifies NZSPA's minimum window replacement requirements that Project Teams must meet when retrofitting windows in existing buildings.

Table 1: NZSPA's Minimum Window Replacement Requirements

Description	Requirements
Openable Area	- Any window replacement must, as a minimum under the NZBC, provide the same openable area provided by the existing windows and comply with NZBC G4 (i.e., a minimum net window openable area greater than 5% of the floor area). - An openable window cannot be replaced by a fixed window unless it has been approved by the School Design team. - Any window replacement must, unless not practical to do so ('exception'): - If it's single sided ventilation, increase net openable area to 10% of the floor area. - If it's cross-ventilation, the total opening area must be greater than 5% of the floor area, and evenly distributed across at least two sides on each outside wall.
Window Type	- Narrow top-hung and Bi-fold windows must be avoided. - Top-hung windows are preferred. - Side-hung windows only to be used if fully sheltered from prevailing weather.
Window Accessories	- Window winders must be provided for any windows that cannot be reached to close and they must be made easily accessible to users. Optimum height for mounting the winder operation to be at 900mm-1000mm above the room floor level. - All windows must have the ability to be held partially open by a small amount (e.g., 1-2 cm) to promote trickle ventilation (e.g., use of double tongued handles on aluminium joinery). - All windows are to be unrestricted unless required on pedestrian walkways or there is risk of falling – as per the DQLS – Indoor Air Quality and Thermal Comfort Requirements (refer to Figure 1 below). - Any windows with restrictors must comply with the requirements in NZBC Clauses F4 and D1.
General Considerations	- Consider maximizing the net effective opening area (noting this differs from net openable area required by NZBC) as practicably possible (refer to Figures 2 and 3 below). - Consider meeting the current standards outlined in the DLQS – Indoor Air Quality and Thermal Comfort Requirements as practicably possible.

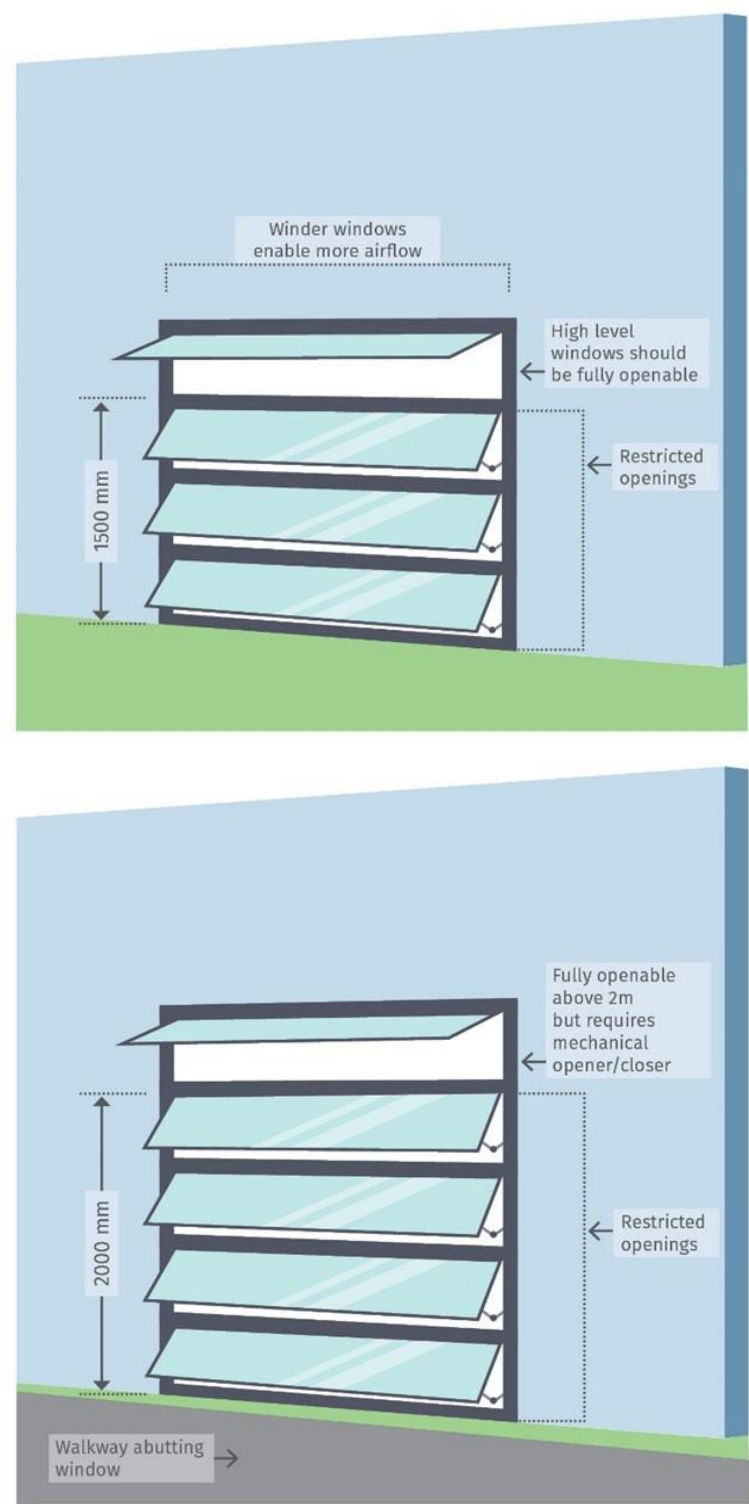
Description	Requirements
Compliance	• If the design complies with the requirements set out above, this should be noted in the design and quote documentation and no further review is needed. • If compliance cannot be achieved, all exceptions with supporting calculations must be approved by the School Design team: – A valid exception is where meeting the requirements would require additional windows to be installed, unreasonably extending the scope of the works. – Though all designs need to be practical and economically viable, budget alone is not a valid reason for an exception.

All ventilation related enquires should be made through the ventilation.mailbox@schoolproperty.govt.nz mailbox.

Enquires related to NZSPA's window replacement requirements and all exceptions should be made through the School.Design@schoolproperty.govt.nz mailbox.

Appendix 1: Illustration on Window Restrictor Requirements

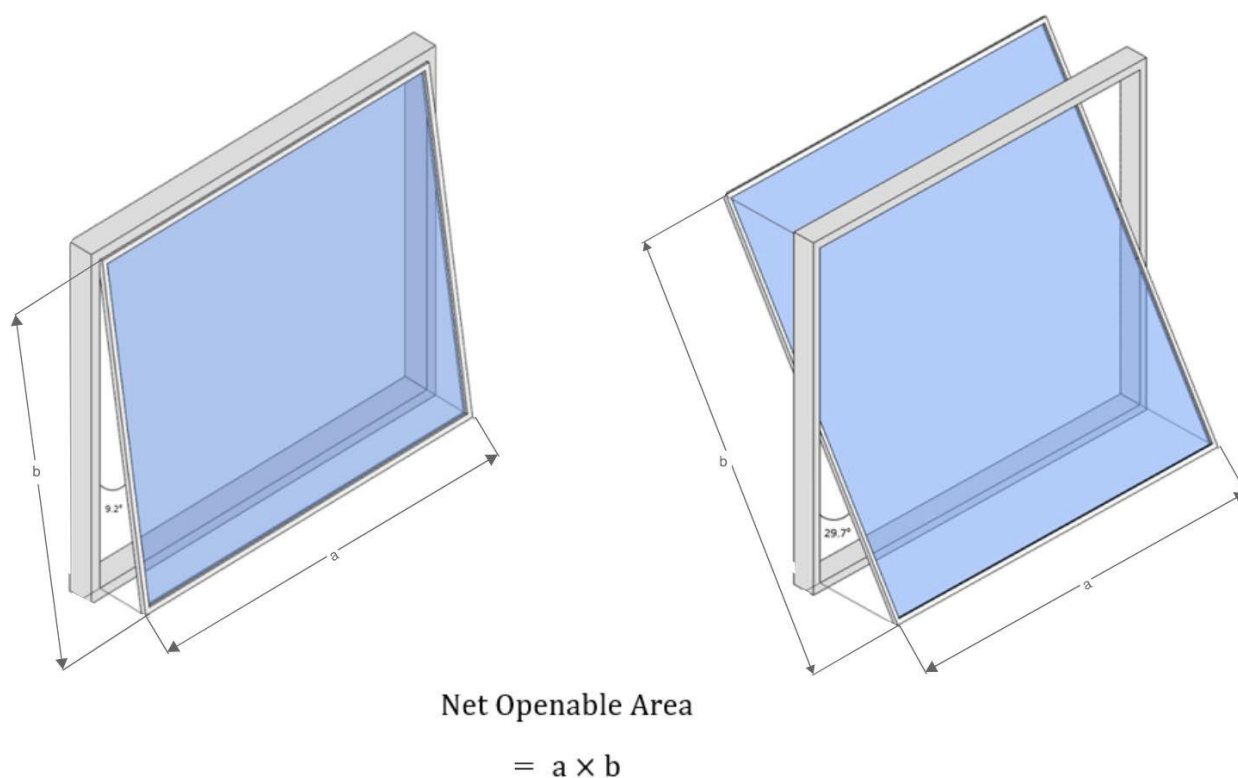
Figure 1: Requirement for window restrictors on school buildings



Appendix 2: Illustration on NZBC vs NZSPA's Window Opening Area Calculations

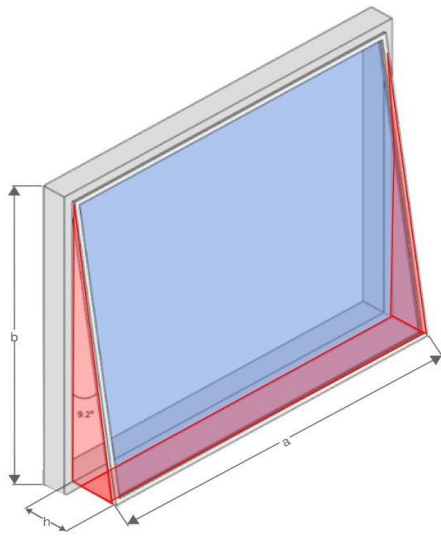
A_o - Net openable area face dimensions (calculation of the length and width of the window sashes based on NZBC Clause G4).

Figure 2: NZBC's Net openable area face dimensions

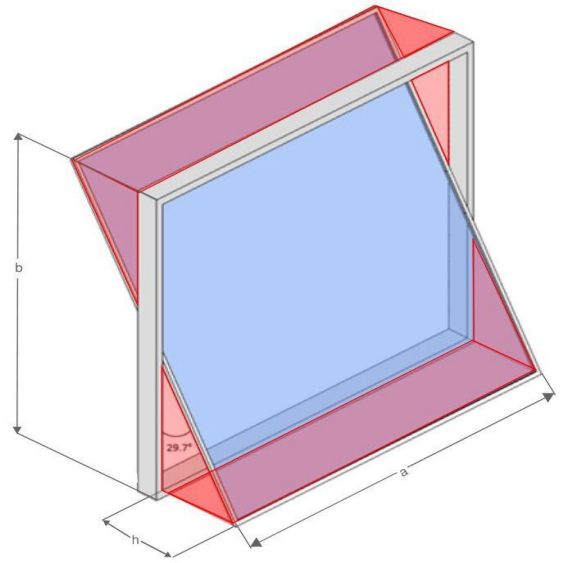


A_e - NZSPA's effective window opening area (calculation of actual window openable area for airflow (ventilation), considering the restrictor width/angle).

Figure 3: NZSPA's effective window opening area illustration



$$\text{Net Effective Openable Area} = h \times (b + a)$$



$$\text{Net Effective Openable Area} = 2[h \times (\frac{b}{2} + a)]$$