

Metal Grille and Louvre

Grilles and louvres are commonly used within or affixed to the exterior of a building. For the avoidance of doubt and the purposes of this practice note, grille refers to a grating or openwork barrier, usually of metal, used to cover, conceal, decorate or protect an opening whereas louvre refers to an assembly of sloping, overlapping blades or slats which may be fixed or adjustable and designed to admit air and/or light in varying degrees and to exclude rain, and usually are used in doors, windows, and the intake and discharge of mechanical ventilation systems.

Structural Submissions

2. In general, metal grilles/louvres may be used at different locations¹ and would perform several different functions as categorised below:

- (a) Type 1 – serving as an external cladding ;
- (b) Type 2 – forming wholly or partly as an external wall of a building; and/or
- (c) Type 3 – serving as a protective barrier.

3. Requirements on the structural submission for metal grilles/louvres² according to their function(s) as listed in paragraph 2 above are given in the table below:

Type	Structural Submission	Design Reference
1	Required if any part to be installed above 6m from the adjoining ground level or adjoining floor ³ .	Appendices B6 and B9 to PNAP ADV-33
2	Required if – <ul style="list-style-type: none"> ● the structural span exceeding 6m; or ● to be located where the design wind pressure is 2.86 kPa or above as well as having a structural opening with an area exceeding 6m² or the least dimension exceeding 1.8m⁴. 	Appendices B7 and B10 to PNAP ADV-33

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¹ Structural Submission for metal grilles or louvres is not required if they are serving as a facing or an architectural decoration affixed to the interior structural elements of a building.

² For other construction materials such as concrete or glass, the design requirements stipulated in the relevant codes of practice should be followed.

³ Reference should be made to paragraph 4 of PNAP APP-16 on Cladding.

⁴ Reference should be made to paragraphs 4 to 6 of PNAP APP-37 on Curtain Wall, Window and Window Wall, particularly the responsibilities under paragraph 6 where structural details are not required to be submitted for approval.

3	Required under all circumstances, except for those also performing the function of Type 2 and meeting the respective criteria where structural submission is not required as specified above.	Paragraph 5 of PNAP APP-110
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4. Where the structural details of the metal grilles/louvres are not required to be submitted for approval in accordance with the above guidelines, the authorized person and registered structural engineer should ensure that the design, fabrication and installation of these elements will achieve the required safety standard.

Designated Exempted Works and Minor Works relating to Grille or Louvre

5. According to item 27 in Part 2 of Schedule 2 of the Building (Minor Works) Regulation (B(MW)R), the erection, alteration, repair or removal of any metal window security grille, or metal wind guard for an opening on an external wall of a building is designated exempted works.

6. While there are no specific minor works (MW) items relating to grille or louvre under the B(MW)R, if the grilles or louvres form part of an external cladding, serve as part or whole of a window/window wall or form part of a protective barrier, they may be erected under the relevant MW items⁵. Reference can be made to Schedule 1 of the B(MW)R and PNAP APP-147 regarding the list of MW items and the simplified requirements respectively.

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⁵ They are MW item 3.31 for external cladding, MW items 2.8 or 3.6 for window / window wall, and MW item 1.6 for protective barrier.