

立法會發展事務委員會

LEGISLATIVE COUNCIL PANEL ON DEVELOPMENT

建築物玻璃窗所訂的建築標準

Standards for Glass Windows of Buildings

屋宇署

Buildings Department

建築物玻璃窗所訂的建築標準

Standards for Glass Windows of Buildings

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目的

Purpose

- 簡介《建築物條例》（第**123**章）（《條例》）下就建造玻璃窗（包括玻璃幕牆、鋁窗及玻璃外牆）所訂的建築標準
Introduction of building standards specified for construction of glass windows (including glass curtain walls, aluminium windows and glass walls) under the Buildings Ordinance (BO) (Cap. 123)
- 近年作出的更新工作
Updates in recent years to
 - 符合國際標準
bring it in line with international standards
 - 抵禦惡劣天氣
better equip for extreme weather

相關規管和標準

Relevant Regulations and Standards

- 建造玻璃窗（包括玻璃幕牆、鋁窗及玻璃外牆）屬《條例》第2條定義下的「建築工程」
Construction of glass windows (including curtain walls, aluminium windows and glass walls) are “building works” under section 2 of the BO
- 玻璃窗的用料、設計和建造受《建築物（建造）規例》（第123B章）所規管
Materials, design and construction of glass windows are controlled under the Building (Construction) Regulations (Cap. 123B)
- 屋宇署發出的《認可人士、註冊結構工程師及註冊岩土工程師作業備考》（《作業備考》）及作業守則
Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAPs) and Codes of Practice issued by the Buildings Department (BD)
- 建造玻璃窗一般須獲得屋宇署的批准及同意
Approval and consent by BD is required for the construction of glass windows
- 小型工程監管制度
Minor Works Control System (MWCS)

《作業備考》

Practice Notes



- **1984年**發出《作業備考**106**》- 幕牆系統
1984, issued PNAP 106 – Curtain Wall Systems
- **2000年**發出《作業備考**239**》- 玻璃窗和玻璃牆
2000, issued PNAP 239 – Window and Window Wall
- **2001年**發出《作業備考**248**》- 鋁窗
2001, issued PNAP 248 – Aluminium Windows
- **2006年**修訂《作業備考**106**》並納入《作業備考**239**》的內容於其中
2006, revised PNAP 106 and incorporated into it the content of PNAP 239
- **2006年**修訂《作業備考**248**》，更新鋁窗的設計，該作業備考於**2009年**改稱為《作業備考**APP-116**》
2006, revised PNAP 248 to update the design of aluminium windows. This PNAP was renamed as PNAP APP-116 in 2009.
- **2009年**，《作業備考**106**》改稱為《作業備考**APP-37**》。**2012年**修訂《作業備考**APP-37**》，加入了鋼化玻璃的品質保證和監督規定及對使用金屬爪具嵌固件作為支承玻璃板的設計和測試規定
- PNAP 106 was renamed as PNAP APP-37 in 2009. 2012, revised PNAP APP-37 to include quality assurance and supervision requirements of tempered glass and design and testing requirements of metal spider fixings for supporting glass panes
- **2020年**修訂《作業備考**APP-37**》加入玻璃窗、玻璃牆及幕牆的上鎖裝置的設計和測試規定
- 2020, revised PNAP APP-37 to include design and testing requirements of locking devices for windows, window walls and curtain walls

作業備考APP-37 - 幕牆、玻璃窗及玻璃牆

Practice Note APP-37 - Curtain Wall, Window and Window Wall

- 技術規定

Technical Requirements

- 幕牆的設計及建造須符合《建築物（建造）規例》（第**123B**章）第**43**條所列明的特定規定

Curtain wall shall be designed and constructed to meet the specific requirements set out in the regulation 43 of the Building (Construction) Regulations (Cap.123B)

- 抵禦風荷載及當作為防護欄障時施加的水平外加荷載

Resist wind load and horizontal imposed load when acting as protective barrier

- 物料品質及銹蝕防護的規定

Requirements on quality of materials and protection against corrosion

- 鋼化玻璃的品質保證

Quality Assurance of Tempered Glass

- 生產商的品質保證計劃

Quality Assurance Scheme of manufacturer

- 熱浸程序的符合規定報告

Compliance report for heat soak process

- 品質監督計劃及品質監督報告

Quality supervision plan and quality supervision report

作業備考APP-37 - 幕牆、玻璃窗及玻璃牆

Practice Note APP-37 - Curtain Wall, Window and Window Wall

- 驗證測試

Compliance test

- 結構密封劑

Structural sealant

- 金屬爪具嵌固件

Metal spider fixing

- 上鎖裝置

Locking device

- 幕牆（代表性部分）

Curtain wall system (representative module)

- 檢查及維修保養

Inspection, Maintenance and Repair

《2018年玻璃結構作業守則》

Code of Practice for Structural Use of Glass 2018

- 顧問研究
Consultancy Study
- 督導委員會
Steering Committee
- 諮詢業界
Consultation with stakeholders
- 於**2018年2月**發布《**2018年玻璃結構作業守則**》（《**玻璃守則**》）
Promulgated the Code of Practice for Structural Use of Glass 2018 in February 2018 (Glass Code)



《2018年玻璃結構作業守則》

Code of Practice for Structural Use of Glass 2018

- 就玻璃工程的設計、建造、測試及品質保證提供最新及綜合性的指引
Provide up-to-date and comprehensive guidelines for design, construction, testing and quality assurance of glass structures
- 引入國際標準普遍使用的玻璃設計方法
Introduce glass design methods adopted widely internationally
- 指定規定
Specified requirements
 - 品質控制及安全要求
Quality control and safety requirements
 - 樓宇外牆使用夾層玻璃
Use of laminated glass at external walls of buildings
 - 安全測試
Safety test
 - 保養維修
Maintenance and repair

《2018年玻璃結構作業守則》

Code of Practice for Structural Use of Glass 2018

- 自**2019年2月**起，在新建樓宇方案中設計及建造玻璃窗及其結構構件時，必須遵從《玻璃守則》中載列的技術原則

From February 2019 onwards, design and construction of glass windows and their structural elements of new building proposals shall comply with the technical principles specified in the Glass Code

- 由**2019年2月**至**2020年4月底**，屋宇署已批出**328**份按《玻璃守則》進行設計的圖則

328 nos. of building plans have been approved by BD in accordance with the Glass Code from February 2019 to April 2020

- 成立《玻璃守則》技術委員會(成員包括業界、學術界、建築署及房屋署代表)，定期檢討《玻璃守則》

Technical Committee on Glass Code (with representatives from industry, academia, the Architectural Services Department and Housing Department) has been set up for regular review of the Glass Code

《香港風力效應作業守則》

Code of Practice on Wind Effects in Hong Kong

- **1983**年，發布首本《香港風力效應作業守則》（《風力守則》）
Code of Practice on Wind Effects in Hong Kong (Wind Code) was firstly promulgated in 1983
- 於**2004**年更新
Updated in 2004
- 於**2019**年再次修訂
Further revised in 2019



《香港風力效應作業守則》

Code of Practice on Wind Effects in Hong Kong

- 設計風速高於天文台發出十號颶風信號時達到的風速
Design wind velocities higher than the wind velocities attained at the time of the hoist of Hurricane Signal No.10 by the Hong Kong Observatory
- 要求玻璃窗設計加入額外風荷載的安全系數
Require extra safety factor for wind load in glass window design
- 根據《風力守則》、《玻璃守則》及作業備考所設計的玻璃窗，若保養維修得宜，應足以抵禦超強颱風的風力及應對未來氣候變化下的颱風影響
Window designed in accordance with Wind Code, Glass Code and PNAPs, if under proper maintenance and repair, should be adequate to resist the wind load due to super typhoon and cope with the effect of climate change on typhoons in the future

2019年《香港風力效應作業守則》

Code of Practice on Wind Effects in Hong Kong 2019

- 顧問研究檢討**2004年《風力守則》**，包括
Consultancy study for review of the Wind Code 2004, including
 - 比較國際相關作業守則
Comparing relevant international codes of practice
 - 與國際設計方法接軌
Aligning international design methods
 - 配合風力工程和科技的最新發展
Keeping in pace with the latest developments of wind engineering and technologies
 - 考慮氣候變化對颱風風速的影響
Considering effect of climate change on the velocities of typhoons
- **《風力守則》修訂版已於2019年9月發布**
Revised Wind Code was promulgated in September 2019.

2019年《香港風力效應作業守則》

Code of Practice on Wind Effects in Hong Kong 2019

- 《風力守則》修訂版引入新的設計參數包括：

New design parameters introduced in the revised Wind Code include:

- 正向風力及側向風力的關係

Relationship between along-wind and across-wind

- 因樓宇受風面承受不平均風壓而對其產生的扭力

Torsional force due to uneven wind pressure on the wind frontal face of building

- 不同形狀（長方形、正方形、圓形、L形，U形，X形，Y形及Z形）的建築物

Buildings of different shapes (rectangular, square, circular, L, U, X, Y and Z shape)

- 直接計算周邊建築物的遮護效應

Direct calculation of sheltering effect of surrounding buildings

- 直接計算不同方向的風速

Direct calculation of wind velocities at different directions

- 更全面的風洞測試技術規定的指引

More comprehensive guidelines on the technical requirements for wind tunnel test

2019年《香港風力效應作業守則》

Code of Practice on Wind Effects in Hong Kong 2019

將於本年第**3**季成立《風力守則》技術委員會，適時檢視《風力守則》，成員包括相關專業學會、學者及政府部門（例如天文台、建築署、房屋署及屋宇署）的代表

Will set up a Technical Committee on Wind Code comprising representatives from relevant professional institutes, academia and government departments (e.g. Hong Kong Observatory, Architectural Services Department, Housing Department and Buildings Department) in Q3 2020 for timely review of the Wind Code

保養維修

Maintenance and Repair

- 業主責任

Owners' responsibility

- 強制驗樓計劃 / 強制驗窗計劃

Mandatory Building Inspection Scheme / Mandatory Window Inspection Scheme

- 遵辦修葺令 / 勘測令

Comply with repair order / investigation order

- 玻璃窗、玻璃外牆或玻璃幕牆的修葺或更換

Repair or replacement of glass windows, window walls or glass curtain walls

- 小型工程

Minor Works

- 改動及加建工程

Alteration and Addition Works



多謝

Thank You