Safe Use of Gondolas for Facade Inspection: Lessons from MOM Accident Reports

Gondola safety singapore — practical guidance for building owners and managers

Facade Inspection Singapore — BCA-Approved Competent Person

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Gondola safety in Singapore for facade inspection — MOM accident lessons, anchorage design, Authorised Examiner testing, weekly re-inspection and fall protection.

Gondolas are the workhorse of facade inspection in Singapore — there are around 4,000 active gondolas registered with the Ministry of Manpower at any time, and the great majority of close-range facade inspections on tall buildings end up using one. The same MOM data that quantifies the population also quantifies the risk: in the three years before MOM's 2009 factsheet on gondola accidents, three workers were killed while working on gondolas, including a fatal incident on 12 November 2009 in which a worker on the ground floor was struck by a piece of plaster chipped off during installation work happening on the rooftop above.

For a building owner, MA or facade inspector, gondola safety in Singapore is not a generic OSH topic — it is a tightly regulated regime with three pillars: proper design and installation, regular inspection and maintenance, and adequate fall protection. This post walks through each pillar using MOM's stated requirements and accident learnings.

Why gondolas need disproportionate attention

Gondolas move vertically via winches attached to wire ropes secured to the rooftop using an anchorage system. To cover a full elevation, the anchorage point has to be relocated as the work progresses across the facade. That means the integrity of the gondola and its anchorage is being remade every time it moves — and each remake is a fresh opportunity for something to fail.

The accident pattern MOM has documented makes this point grimly. In one 2006 case, two workers were repositioning a gondola resting on an external cantilevered platform on the ninth storey when it tilted outwards while the deceased was tensioning the cables; he fell 39 m to the ground. The occupier was fined S$130,000 under the WSHA. In a 2007 case, a worker climbing off a gondola onto an inclined HDB canopy fell to his death; the employer was fined S$70,000, the

director S$20,000, and the occupier a further S$18,000 under WSHA and the Factories (Scaffolds) Regulations.

Each of these accidents is a textbook violation of one of the three pillars below.

Pillar 1 — Proper design, installation and testing

Every gondola and its anchorage system must be designed by a Professional Engineer, in accordance with established codes of practice and standards. The design must specifically address:

- Wall clamp anchorages. Where wall clamps are used, they must be installed on a structure capable of withstanding the imposed stresses. Where the metal clamp contacts a plaster wall, adequate packing must be used. Sufficient clearance should be maintained between wall clamps and other parts of the supporting structure outside designated padded areas.
- Wire rope path. Wire ropes must remain vertical at all times and must not contact any part of the building such as a roof canopy.
- Entry/exit point. A proper entry and exit point must be provided so workers can climb in and out from a secured and safe landing.

A pre-installation site inspection is mandatory to identify problems that would hinder safe operation — for example, a planned anchorage point above an inclined canopy, or a wire-rope path that grazes a parapet.

After design, the gondola can only be erected by an Approved Scaffold Contractor (ASC), which is responsible for installation strictly to design and for ensuring the gondola is installed by competent riggers under the supervision of a qualified Suspended Scaffold Supervisor. Safe working load and the maximum number of workers must be clearly specified to prevent overloading.

After first installation on site, the gondola must be tested by an Authorised Examiner — a Professional Engineer specially approved by MOM — before it is used. That load test is to be repeated at least once every 6 months thereafter.

Pillar 2 — Regular inspection and maintenance

Because gondolas move and their anchorage is repeatedly remade, MOM requires a layered inspection cadence:

- Re-inspection by the qualified supervisor every 7 days, or whenever the gondola is relocated, or after environmental events (heavy storms) that could have affected stability or strength.
- Winch inspection — winches must be checked to ensure the gondola remains horizontal during ascent and descent. Winches should be opened up for thorough inspection by a competent person at least once every 12 months.
- Wire rope inspection — wire ropes must be checked to ensure they are not frayed or damaged.

These three checks are the minimum, on top of the 6-monthly Authorised Examiner load test from Pillar 1.

Pillar 3 — Adequate fall protection

Workers in gondolas are continuously exposed to fall-from-height risk. Fall protection layered on top of the gondola itself must include:

- A safety harness coupled to a shock absorber for every worker, secured to an independent lifeline — not to the gondola itself.
- Compliance with the WSH (Work at Heights) Regulations and the relevant training course at worker, assessor and manager levels.

MOM's prohibitions are blunt:

- Do not overload the gondola with equipment or materials.
- Do not over-stretch by standing on the guardrail.
- Do not climb out of the gondola except at the designated landing point or level.

The 2007 HDB fatal accident violated the third prohibition. The 2009 fatal accident violated Pillar 1 — a falling object from the rooftop installation hit a worker tensioning cables in the gondola at ground level.

Common red flags during a gondola operation

- Anchorage design not signed off by a Professional Engineer
- Authorised Examiner certificate older than 6 months
- Weekly supervisor inspection not documented
- Wire rope contacting a canopy, parapet or sunshade along its path
- Workers on rooftop installation work happening above active ground-level operations without exclusion zone below
- Workers climbing out of the gondola onto a canopy or non-designated ledge
- Lifeline anchored to the gondola itself rather than an independent point
- Equipment or materials in the gondola exceeding the stated SWL

Singapore regulatory context

The legal framework for gondola operations is the Workplace Safety and Health Act, with the WSH (Scaffolds) Regulations, WSH (Work at Heights) Regulations and WSH (General Provisions) Regulations the most directly relevant. The applicable Approved Code of Practice is CP 20:1999 — Code of Practice for Suspended Scaffolds. Gondola design and operation is monitored by MOM's Occupational Safety and Health Inspectorate. For facade inspection specifically, the BCA periodic facade inspection regime under the Building Control Act sets the inspection requirement, but the gondola access falls entirely under WSHA — section 16 and section 17 cover MEWPs and gondolas, including occupier-owned machinery scenarios.

What to do next

If your building is mobilising for a periodic facade inspection that uses gondolas, a five-line owner-side checklist will eliminate most of the avoidable risk: confirm the PE-stamped anchorage

design, confirm the Authorised Examiner certificate is current, confirm the ASC is approved, confirm the suspended-scaffold supervisor has signed the latest weekly inspection, and confirm the workers have valid WAH training. If any of those five lines is unchecked when work starts, the inspection isn't ready to mobilise.

Author — Facade Inspection Singapore · BCA-Approved Competent Person Team. Inspections issued within 5 working days, with documented gondola access plans and risk assessments.

- Service overview: facadeinspection.com.sg
- Periodic facade & structural inspection: Periodic Structural Inspection
- Get a quote: Contact our facade inspectors

Sources & references

• Source training material: MOM Factsheet — Recent Accidents Involving Use of Gondolas (Ref 20091120-37, 20 Nov 2009).

• Building and Construction Authority (BCA) — Periodic Facade Inspection (PFI), Building Control Act and Building Control (Periodic Inspection of Buildings and Building Facades) Regulations 2021. www1.bca.gov.sg

• Ministry of Manpower (MOM) — Workplace Safety and Health Act 2006 and subsidiary regulations including WSH (Risk Management), WSH (Work at Heights), and WSH (Scaffolds) Regulations. www.mom.gov.sg

• Singapore Civil Defence Force (SCDF) — Code of Practice for Fire Precautions in Buildings 2023 Edition (effective 1 March 2024). www.scdf.gov.sg