

Performance Monitoring System for Class 3b & Class 3c Competent Person

Responsible for Carrying out Examination of a Gasholder under the
Gas Safety (Gasholders Examination) Regulation

Performance Monitoring System (PMS) on Class 3b & Class 3c Competent Person

1. Background

Under the Gas Safety Ordinance, Cap.51, the owner of a gasholder shall cause it to be examined externally and internally by a competent person. A competent person, in relation to any duty to examine a gasholder under the regulation of the Ordinance, means a person who is competent to perform the duty by virtue of his practical and theoretical training and actual experience. The Gas Standards Office (GasSO) has established and administered a list of Class 3 competent persons (CP) to facilitate the owners of gasholders in fulfilling their duties as stipulated in Regulations 6B and 6C of the Gas Safety (Gas Supply) Regulations (Cap. 51B) and the Gas Safety (Gasholders Examination) Regulation (Cap. 51G).

The responsibilities of a CP include:

- (a) To ensure gasholders are maintained in accordance with the Gas Safety Ordinance and relevant codes of practice;
- (b) To prepare, supervise and carry out examination of gasholders;
- (c) To examine and certify reports of gasholders.

There are 3 classes of CP under which they are required to perform the following duties:

- (i) Class 3a - Carry out monthly/ quarterly/ annual examination of gasholders;
- (ii) Class 3b - Certify monthly/ quarterly/ annual examination of gasholders; and
- (iii) Class 3c - Carry out internal examination of gasholders.

2. Objective

The objective of this performance monitoring system for Class 3b and Class 3c CP is to establish a systematic approach on monitoring the performance of the CP in discharging their responsibilities in relation to the Gas Safety (Gasholders Examination) Regulation in a consistent and quality manner.

3. Performance Monitoring System (PMS)

- (a) The PMS aims at:
 - (i) Upkeeping the quality of examination; and
 - (ii) Assessing the performance of Class 3b and Class 3c CP to ensure a consistent competency level.
- (b) The PMS is developed based upon the requirements of the following documents:
 - (i) Gas Safety Ordinance (Cap. 51);

- (ii) Gas Safety (Gasholders Examination) Regulation (Cap. 51G); and
- (iii) Form 101 - Application to Become a Competent Person.

(c) The PMS operates as follows:

- (i) The performance of each practising CP is monitored by auditing his/her examination findings and conducting an audit inspection to be carried out by Engineer/Inspector of GasSO, in which the major duties of CP as set out in Section 4 and the demerit system as set out in Section 5 of the PMS will be used to compile a "PMS Report" for conducting the audit inspection under the witness of an authorised representative of the owner of the gasholder.
- (ii) An audit inspection on each practising Class 3b CP is conducted at a frequency of at least once every year while Class 3c CP is on a job basis when he/she carries out internal gasholder examination in the territory. In carrying out an audit inspection of a CP, the Engineer/Inspector of GasSO selects target gasholders based on the examination programme prepared by the owners of the gasholders. The owners shall be informed of the audit inspection.
- (iii) The audit inspection is focused on the following areas:
 - Gasholder's testing and examination techniques;
 - Gasholder's construction and operation;
 - Gasholder's work safety items;
 - Certification and associated documentation items.
- (iv) The performance of the CP is measured by assessing the degree of non-compliance against the list of major duties as set out in Section 4 and the demerit system as set out in Section 5 of the PMS. The assessment mechanism is as follows:
 - (a) One non-compliance (N/C) is given to a CP when in the opinion of GasSO's Engineer/Inspector that the CP has failed to assess/identify any one item laid down in the list of major duties during an audit inspection;
 - (b) Demerit points are accorded to a CP when in the opinion of GasSO's Engineer/Inspector that the CP has failed to assess/identify items laid down in the demerit system during an audit inspection.
- (v) N/C and demerit points are assigned by taking into account the following factors:
 - (a) Compliance with relevant Ordinance and Regulations; and
 - (b) Degree of severity and potential impact to safety.
- (vi) The CP shall later be notified in a letter on the N/C or demerit points accorded in the audit inspection within 6 weeks from the date of inspection.
- (vii) In the event on any dispute on the result of the N/C or demerit points accorded,

the CP may refer the case in writing to the Senior Engineer/Chief Engineer of GasSO for review within 15 working days from the notification date of the letter from GasSO. If the dispute cannot be resolved, the CP may appeal in writing to the Assistant Director, Gas and General Legislation (AD/GGL), Electrical & Mechanical Services Department, HKSAR Government within 30 working days from the notification date of the letter from GasSO. The decision made by the AD/GGL shall be finalized. The result of the N/C or demerit points accorded will be adjusted if the appeal is substantiated.

(viii) Each N/C or demerit point shall remain valid for a 12 months rolling period. This rolling period is referred to as the 'specified period'.

(ix) The PMS has three levels of action with reference to the performance of the CP.

(a) The first level of action will be taken if

1. A CP has been given one N/C within a specified period; or
2. A CP has accumulated 5 to 10 demerit points within a specified period.

Under the first level of action, an advisory letter will be issued to the CP pinpointing his/her unsatisfactory performance and instructing him/her to immediately improve his/her performance. Subsequent follow-up inspections will be closely monitored by GasSO.

(b) The second level of action will be taken if

1. A CP has been given two N/Cs within a specified period; or
2. A CP has been given one N/C and has accumulated 11 to 20 demerit points within a specified period; or
3. A CP has accumulated more than 20 demerit points within a specified period.

Under the second level of action, a warning letter will be issued to the CP instructing him/her to immediately improve his/her performance and advising him/her on the possible suspension of his/her name from the Class 3 CP list. Subsequent follow-up inspections carried out by the CP will be closely monitored by GasSO.

(c) The third level of action will be taken if

1. A CP has been given three N/Cs within a specified period; or
2. A CP has been given two N/Cs and has accumulated 11 to 20 demerit points within a specified period; or
3. A CP has been given one N/C and has accumulated more than 20 demerit points within a specified period.

Under the third level of action, a reprimand letter will be issued to the CP informing him/her that his/her name has been suspended from the list of

Class 3 CP kept by GasSO for a period of one year from the date of the audit inspection. He/she will also be requested to suspend from carrying out all Class 3 CP related examination works during the suspension period.

- (d) The suspended CP may apply in the form of a letter for re-entering the list of Class 3 CP from GasSO after the lapse of the suspension period. If he/she is still carrying out examination in the gasholder industry with a proven satisfactory track record, his/her name will be re-listed in the Class 3 CP list kept by GasSO.
- (x) Once the suspension from the CP list action is taken, all the N/C and demerit points accorded to the CP will be purged.

4. List of Major Duties of Class 3b CP

Item No.	Major Duties	Cap. 51G Ref.
<i>Dry- and Water-sealed Gasholder</i>		
A	Certify the report of the following examination in accordance with the requirements of the Gas Safety (Gasholders Examination) Regulations: (i) Monthly examination; (ii) Quarterly examination (for dry-sealed gasholder only); (iii) Yearly examination	2,3

List of Major Duties of Class 3c CP

Item No.	Major Duties	Cap. 51G Ref.
<i>Dry- and Water-sealed Gasholder</i>		
A	Conduct the internal examination in person or note the Gas Authority of his stand in representative	4
B	Conduct the internal examination in the presence of the Gas Authority	4

5. Demerit System for Class 3b CP

Item No.	Sub-standard Performance of CP	Demerit Points
<i>Dry-sealed Gasholder (Schedule 1 & 3 of Cap. 51G)</i>		
<i>Conventional piston type Gasholder</i>		
1a)	Failed to assess the off-site and on-site condition of a gasholder, e.g. security, sources of ignition, electrical equipment, provision of emergency instruction and fire fighting equipment, etc.	5
1b)	Failed to assess the bottom condition, e.g. foundation settlement, guard below levelling weight, earthing connections, footing, etc.	5
1c)	Failed to assess the shell condition (external and/or internal), e.g. side plate, vents with mesh, access doors, staircase, levelling weights and guides, volume indicator, etc.	5
1d)	Failed to assess the roof condition (external and/or internal), e.g. steel roof, manways, framing, handrails and toeboards, sheaves, levelling weights, volume relief valve, concentricity and plumb measurement, etc.	5
1e)	Failed to assess the piston condition, e.g. atmosphere above piston, piston plating, piston ladder, weights on deck, shell belt angle, piston seal bar, abutment plates, rope anchorage, etc.	5
1f)	Failed to assess the piston/telescoping fender condition, e.g. fender, walkway and handrails, fender ladder, fender seal bars, piston engaged and discharged T-fender, etc.	5
1g)	Failed to assess the seal condition, e.g. atmosphere above seal, seal surface, bolted connections, bottom of piston, etc.	10
1h)	Failed to assess the measurement of the variation in level of piston/fender unit taken at each wire rope near top, midway and bottom	10
1i)	Failed to assess the measurement of the variations in clearances between shell and piston/ fender (or telescoping fender) taken at each wire rope near top, midway and bottom	10
1j)	Failed to assess pipes and valves condition	5
1k)	Failed to assess paintwork condition	5
1l)	Failed to assess repairs and/or paintwork carried out since last inspection	5
1m)	Failed to indicate or indicate incorrectly in the Annual Examination Report of a gasholder, e.g. level measurement record, clearance measurement record, etc.	3 (for each record)

Item No.	Sub-standard Performance of CP	Demerit Points
<i>Dry-sealed Gasholder (Schedule 1 & 3 of Cap. 51G)</i>		
<i>Double Membrane Type Gasholder</i>		
1a)	Failed to assess the off-site and on-site condition of a gasholder, e.g. security, sources of ignition, electrical equipment, provision of emergency instruction and fire fighting equipment, etc.	5
1b)	Failed to assess the bottom condition, e.g. foundation settlement, earthing connections, footing, etc.	5
1c)	Failed to assess the membranes condition (outer membrane and/or inner membrane), e.g. coating, clamping ring of the inspection window and bottom clamping plate, etc.	5
1d)	Failed to assess the steel tank condition, e.g. steel roof, manways, manholes, framing, handrails, toeboards and the ventilation grilles, etc	5
1e)	Failed to assess the gas sensor, e.g. sampling tube and connection, etc.	5
1f)	Failed to assess the supporting air blowers including air hose and connected parts, e.g. blowers anchors, impellers, motor, motor bearings, air filters, flexible hose and bolted connections, etc.	10
1g)	Failed to assess the level measurement devices, e.g. cable length sensors and signal in the switchboard, etc.	10
1h)	Failed to assess pipes and valves condition	5
1i)	Failed to assess paintwork condition	5
1j)	Failed to assess repairs and/or paintwork carried out since last inspection	5
1k)	Failed to indicate or indicate incorrectly in the Annual Examination Report of a gasholder	3 (for each record)

<i>Water-sealed Gasholder (Schedule 2 of Cap. 51G)</i>		
2a)	Failed to assess framing condition, e.g. columns, girders, junction of girders and columns, wind bracing, ladders or staircase and handrail, etc.	5
2b)	Failed to assess top lift condition, e.g. crown sheets, patches on crown sheets, ladder or staircase and handrails, carriages and rollers, state of roller lubrication, side sheets, patches on side sheets, paintwork, cup and deposits and leakage, effective depth of seal, state of inflation at the time of inspection, etc.	5
2c)	Failed to assess second lift condition (refer to item 2b)	5
2d)	Failed to assess third lift condition (refer to item 2b)	5
2e)	Failed to assess bottom lift condition (refer to item 2b)	5
2f)	Failed to assess tank condition, e.g. side plates, condition at water level and ground level, level of water-overflow, deposits and leakages, carriages and rollers, state of roller lubrication, paintwork, etc.	5
2g)	Failed to assess the horizontal measurements from lift to lift or tank top	10
2h)	Failed to assess the vertical measurements from top of grip to water level	10
2i)	Failed to assess the measurement of the position of rollers relative to guides on each lift	10
2j)	Failed to assess any unusual variations in pressure records	5
2k)	Failed to assess repairs and paintwork carried out since last annual inspection	5
2l)	Failed to indicate or indicate incorrectly record(s) in the Annual Examination Report of a gasholder, e.g. horizontal measurement record, vertical measurement record, etc.	3 (for each record)

6. Demerit System for Class 3c CP

Item No.	Sub-standard Performance of CP	Demerit Points
<i>Dry-sealed Gasholder (Schedule 1 & 3 of Cap. 51G)</i>		
<i>Conventional piston type Gasholder</i>		
1a)	Failed to assess shell condition, e.g. side plating, vents, access doors, manways, levelling weight/guides, volume relief pipes, volume indicator, external staircase/ ladders, etc.	5
1b)	Failed to assess roof condition, e.g. roof plating (internal & external), roof vents, manways, roof framing, roof handrail, rope sheaves, support structures, level weight ropes and volume relief valves, purge valves, etc.	5
1c)	Failed to assess piston condition, e.g. piston plating, fender steel work, abutment plates, fender walkway, handrail, access ladders, rope anchors, piston seal angle, clamp bars, J clips, shell belt angle, clamp bars, C clips, piston manways, purge valves, etc.	5
1d)	Failed to assess seal condition, e.g. seal surface, bolted connections, etc.	10
1e)	Failed to measure the variation in level between piston and fender unit taken at each wire rope near top, midway and bottom	10
1f)	Failed to assess the gas side, e.g. seal (gas-side), bottom plate, piston, internal shell, etc.	10
1g)	Failed to assess pipes and valves condition	5
1h)	Failed to assess paintwork condition	5
1i)	Failed to assess repairs and/or paintwork carried out since last inspection	5
1j)	Failed to indicate or indicate incorrectly in the Examination Report of a gasholder, e.g. level measurement record, etc.	3 (for each record)

Item No.	Sub-standard Performance of CP	Demerit Points
<i>Dry-sealed Gasholder (Schedule 1 & 3 of Cap. 51G)</i>		
<i>Double Membrane Type Gasholder</i>		
1a)	Failed to assess membranes condition, e.g. internal and external membrane, coating, inspection window, rope length transducer and top hanging device etc.	5
1b)	Failed to assess steel tank condition, e.g. roof plating, roof vents, manways, manholes, roof framing, roof handrail and support structures, etc.	5
1c)	Failed to assess the supporting air blowers including air hose and connected parts, e.g. blowers anchors, impellers, motor, motor bearings, air filters, acoustic enclosure, flexible hose, gas sampling tube and bolted connections, etc.	5
1d)	Failed to assess seal condition, e.g. seal surface, bolted connections, etc.	10
1e)	Failed to assess pipes and valves condition	5
1f)	Failed to assess paintwork condition	5
1g)	Failed to assess repairs and/or paintwork carried out since last inspection	5
1h)	Failed to indicate or indicate incorrectly in the Examination Report of a gasholder	3 (for each record)

<i>Water-sealed Gasholder</i>		
2a)	Failed to measure from bottom to top (external) the thickness of side sheets (e.g. by ultra-sonic measurement), the clearance of rollers, the level measurement of lifts, etc.	10
2b)	Failed to assess the dimension between columns	5
2c)	Failed to assess the conditions of the crown trussed framework; intermediate rafter, tension bars, etc.	5
2d)	Failed to assess the conditions of the king post	5
2e)	Failed to assess and measure the thickness of bottom plate	10
2f)	Failed to assess the roller movement condition and measure the inner, middle and outer lift roller clearance	5
2g)	Failed to inspect the cup sections of support feet and rest blocks	5
2h)	Failed to inspect the internal joint ring and support stays of inlet or outlet mains	5
2i)	Failed to inspect the structural integrity of walkway	5
2j)	Failed to indicate or indicate incorrectly in the Examination Report of a gasholder, e.g. thickness measurement record, clearance measurement record, etc.	3 (for each record)

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