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31 August 2023

To: Recipients of FSD Circular Letters

Dear Sir/Madam,

FSD Circular Letter No. 5/2023

Revised Annual Inspection Checklist for Sprinkler Systems

This letter serves to announce the revision of the annual inspection (AI) checklist for sprinkler systems (Annex). The FSD Circular Letters No. 8/2020 "Annual Inspection Checklist for Sprinkler Systems" and No. 3/2021 "Annual Inspection Checklist for Sprinkler Systems (Chinese Version)" issued on 15 December 2020 and 7 April 2021 respectively are hereby superseded by this FSD Circular Letter No. 5/2023.

The revision to the existing checklist is devised by making reference to the codes and standards published by relevant overseas professional bodies and upon extensive consultation with local trade members. Major changes include, but are not limited to, the addition of appendices, which are designed for certain components/installations to facilitate the completion of the checklists, if applicable. It specifies the minimum requirements for conducting AIs of sprinkler systems. Items listed in the checklist and its appendices/tables, if applicable, to the sprinkler systems in the buildings/premises shall be inspected/tested. RFSICs shall, after inspection, complete the checklist by indicating, where appropriate, whether the inspected and tested items conform to the standards/requirements stipulated in the Code of Practice for Minimum Fire Service Installations and Equipment **(the version that is relevant to the buildings/premises)**.

/...2

In addition, RFSICs **shall duly observe** the principles and requirements regarding **"Completion of checklists for AI"** and **"Duty and responsibility of RFSICs"** as stated in FSD Circular Letter No. 4/2019. It is important for RFSICs to note that they shall bear the ultimate responsibility for certifying that whether the FSIs are in efficient working order and conform to the requirements specified in the Code of Practice for Minimum Fire Service Installations and Equipment, and that the inspection, testing and maintenance are conducted in accordance with the Code of Practice for Inspection, Testing and Maintenance of Installations and Equipment.

To allow more time for the trade to acquaint themselves with the new arrangement and practice, the revised AI checklist for sprinkler systems will take effect on **1 November 2023**.

For enquiries, please contact our Fire Protection Facilities Supervision Division at 2733 1567 during office hours.

Yours faithfully,

(WONG Ka-wing)
for Director of Fire Services

Encl.

Annual Inspection Checklist for Sprinkler Systems

Annex

RFSIC Ref.: .....

Serial no. of FS 251: .....

Completion Date of Annual Inspection: .....

Building/Premises Address: .....

.....

The annual inspection is conducted in accordance with the appropriate edition of the Sprinkler Installation Rules applicable to the system(s) in the building/premises. In this Checklist, items required in such Rules are inspected and/or tested.

See Table I for the Schedule of Equipment and Table II for the Water Supply Flow Rate and Pressure Testing Record.

1.	**Type of Water Supply** (Please insert a "✓" in the appropriate box)		**Remarks**
	Direct town main connection without any pump	[ ]	Where applicable, parts of the water supply portion that need inspection is listed in Appendix I.
	Sprinkler tank refilled directly from town main	[ ]	
	Sprinkler tank refilled from town main via a transfer pumping installation	[ ]	
	Internal fire main which serves more than one building and/or system.	[ ]	Where applicable, parts of the water supply portion that need inspection is listed in Appendix I.
When sprinkler tank(s) is/are involved, parts of the water supply portion that need inspection is listed in the Checklist for Supply Tanks.			

Remark: "Yes" denotes compliance with the FSD's requirements. "No" denotes non-compliance with the FSD's requirements. "N/A" denotes not applicable. Please insert a "✓" in the appropriate box.

		N/A	Remarks
2.	**Sprinkler Pump Installation** (where provided) The annual inspection for sprinkler pump installation, where provided, is recorded in Appendix II.	[ ]	If N/A, go to 4

3.	**Sprinkler Intermediate Booster Pump Installation** (where provided) The annual inspection for sprinkler intermediate booster pump installation, where provided, is recorded in Appendix IV.	[ ]	If N/A, go to 4

4.	**Sprinkler Inlet**		**Yes**	**No**	**N/A**	**Remarks**
	a.	The sprinkler inlet(s), including the body, couplings, hand-wheel, stems, built-in non-return valves and other accessories, where applicable, is/are intact and free from leakage and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The sprinkler inlet(s) is/are equipped with a drain cock for pressure relief, and the drain cock is tested to be in working order.	[ ]	[ ]	[ ]	....

Annual Inspection Checklist for Sprinkler Systems

			Yes	No	N/A	Remarks
	c.	The sprinkler inlet(s) is/are duly lubricated and tested to operate freely between fully open and fully closed and the internal disc assembly can manoeuvre freely through its full range of operation.	[ ]	[ ]	[ ]	....
	d.	For sprinkler inlet(s) with a built-in stop valve, which has/have been installed/subject to detailed inspection for 4 years or more, the stop valve together with the bonnet, stem, disc and disc seat assembly shall be taken out for detailed inspection to verify all components are intact, free from undue corrosion, and in working order, and the installation/last detailed inspection date is displayed conspicuously on the inlet(s).	[ ]	[ ]	[ ]	....
	e.	The sprinkler inlet cabinet(s) is/are intact and properly protect(s) the inlet(s) against corrosion and abuse.	[ ]	[ ]	[ ]	....
	f.	The sprinkler inlet cabinet(s) is/are properly labelled "SPRINKLER INLET 花灑入水掣" in lettering of at least 50 mm high.	[ ]	[ ]	[ ]	....
	g.	For buildings equipped with more than one sprinkler inlet, where the sprinkler inlets are not interconnected, each sprinkler inlet is properly labelled in terms of the block(s)/floor(s)/area(s) of the building being served as applicable.	[ ]	[ ]	[ ]	....
	h.	The sprinkler inlet(s) is/are clear of obstructions and can be used freely.	[ ]	[ ]	[ ]	....
	i.	The sprinkler inlet(s) is/are affixed with a metal identification plate raised or engraved with English and Chinese characters of at least 50 mm high.	[ ]	[ ]	[ ]	....
	j.	For systems equipped with sprinkler intermediate booster pump(s), the sprinkler intermediate booster pump start/stop buttons and the audio and/or visual alarm(s) adjacent to the corresponding sprinkler inlet(s) are intact, securely mounted, properly wired, properly labelled and free from undue deterioration.	[ ]	[ ]	[ ]	....
	k.	The sprinkler intermediate booster pump start/stop buttons and the audio and/or visual alarm(s) are tested to be in working order.	[ ]	[ ]	[ ]	....
	l.	For improvised system, the pump status indicators and pump starting button adjacent to the sprinkler inlet are intact, securely mounted, properly wired, properly labelled and free from undue deterioration.	[ ]	[ ]	[ ]	....
	m.	For improvised system, the pump status indicators and pump starting button adjacent to the sprinkler inlet are tested to be in working order.	[ ]	[ ]	[ ]	....
	n.	The cables and cable containment for all electrical components, where applicable, are intact, securely mounted, properly wired, and free from undue deterioration.	[ ]	[ ]	[ ]	....
	o.	The pipework, valves, other equipment and accessories as applicable are intact, securely supported, and free from leakage, distortion and undue corrosion.	[ ]	[ ]	[ ]	....

Annual Inspection Checklist for Sprinkler Systems

			Yes	No	N/A	Remarks
	p.	The support and brackets are intact and free from distortion and undue corrosion.	[ ]	[ ]	[ ]	....

5.	**Pressure Reducing Valve (PRV)** (where provided) The annual inspection for pressure reducing valve set(s), where provided, is recorded in Appendix V.	[ ]	If N/A, go to 6

6.	**Sprinkler Control Valve**					
6.1	General					
	a.	The room(s)/enclosure(s), where provided, is/are properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
	b.	The sprinkler control valve set(s) including all valves, trimmings, gauges, alarm gong(s), pipework and accessories as applicable are intact, securely supported, and free from leakage, undue deterioration and corrosion.	[ ]	[ ]	[ ]	....
	c.	The stop valves are duly lubricated and tested to operate freely between fully open and fully closed.	[ ]	[ ]	[ ]	....
	d.	The sprinkler control valve(s) and alarm gong(s) are properly labelled in terms of the block(s)/floor(s)/area(s) of the building being served as applicable.	[ ]	[ ]	[ ]	....
	e.	The pressure switch(es), solenoid valve(s), air compressor(s), valve trim box(es), control/indicating panel(s), where applicable, is/are properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
	f.	The manual release unit(s), where applicable, is/are properly labelled in terms of usage and the area being served.	[ ]	[ ]	[ ]	....
	g.	The upstream main stop valve, downstream main stop valve, bypass stop valve, and alarm stop valve, where applicable, are padlocked in their correct (fully open or fully closed) positions and labelled "Normally Open 常開" or "Normally Closed 常關" as appropriate.	[ ]	[ ]	[ ]	....
	h.	The cables and cable containment are intact, securely mounted, properly wired and free from undue deterioration.	[ ]	[ ]	[ ]	....
	i.	Legible as-built system schematic diagram(s) is/are displayed conspicuously at the sprinkler control valve room/enclosure/space.	[ ]	[ ]	[ ]	....
6.2	Operation of Sprinkler Control Valve (all types of control valve)					
	a.	The operation of retarding chamber(s) and alarm pressure switch(es), where provided, and alarm test valve(s) and alarm gong(s) are tested to be in working order. The setting of pressure switch(es), where provided, is correct and re-adjusted where necessary.	[ ]	[ ]	[ ]	....

Annual Inspection Checklist for Sprinkler Systems

			Yes	No	N/A	Remarks
	b.	For alarm valve(s) which has/have been installed/subject to internal inspection for 4 years or more, the internal of the alarm valve(s) including the clapper, valve seats and all components are inspected to be intact, free from obstruction and undue corrosion, and with all moving parts lubricated and tested to be in working order. The last installation/internal inspection date is displayed conspicuously on the alarm valve(s).	[ ]	[ ]	[ ]	....
	c.	The strainer(s) is/are free from blockage and the screen(s) inside is/are cleaned.	[ ]	[ ]	[ ]	....
	d.	The electrical monitoring switch(es) for stop valves, where provided, is/are intact, properly wired and tested to be in working order.	[ ]	[ ]	[ ]	....
	e.	The water supply is tested to be capable of delivering adequate flow and pressure to the system and the results are recorded in Table II.	[ ]	[ ]	[ ]	....
6.3	**Air Compressor** (where provided) Remarks: The annual inspection for air compressor(s), where provided, is recorded in Appendix VI.				[ ]	If N/A, go to 6.5
6.4	**Operation of Dry Pipe Valve** (where provided) Remarks: The annual inspection for the operation of dry pipe valve(s), where provided, is recorded in Appendix VII.				[ ]	If N/A, go to 6.5
6.5	**Operation of Pre-action Valve and/or Recycling Valve** (where provided) Remarks: The annual inspection for the operation of pre-action valve and/or recycling valve, where provided, is recorded in Appendix VIII.				[ ]	If N/A, go to 6.6
6.6	**Operation of Deluge Valve** (where provided) Remarks: The annual inspection for the operation of deluge valve, where provided, is recorded in Appendix IX.				[ ]	If N/A, go to 7

7.	**Water Columning Prevention Device(s)** (where provided) The annual inspection for water columning prevention device(s), where provided, is recorded in Appendix X.				[ ]	If N/A, go to 8

8.	**Flow Switch** (where provided)				[ ]	If N/A, go to 9
	a.	The flow switch(es) and the associated test valve, drain valve and pipework, where applicable, are securely supported, intact and free from leakage and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The flow switch(es) is/are properly labelled to indicate the floor/area being served.	[ ]	[ ]	[ ]	....
	c.	The test valves and drain valves, where provided, are padlocked at their fully closed position and are labelled "Normally Closed 常關".	[ ]	[ ]	[ ]	....

Annual Inspection Checklist for Sprinkler Systems

			Yes	No	N/A	Remarks
	d.	The flow switch(es) is/are tested to be in working order.	[ ]	[ ]	[ ]	....
	e.	The cables and cable containment are intact, securely mounted, properly wired and free from cracks and undue deterioration.	[ ]	[ ]	[ ]	....
	f.	When an annunciator panel is provided to serve solely the sprinkler systems, additional items of inspection are required. The annual inspection for the additional items is recorded in Appendix XIII.			[ ]	....

9.	**Subsidiary Stop Valve** (where provided)				[ ]	If N/A, go to 10
	a.	The subsidiary stop valve(s) is/are securely supported, intact and free from leakage and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The subsidiary stop valve(s) is/are properly labelled to indicate the floor/area being served.	[ ]	[ ]	[ ]	....
	c.	For subsidiary stop valve(s) concealed inside false ceiling, pipe duct or other enclosure, a duplicate label is fixed at a prominent position on the false ceiling or outside the pipe duct/enclosure as appropriate.	[ ]	[ ]	[ ]	....
	d.	The subsidiary stop valve(s), where provided, is/are duly lubricated and tested to operate freely between fully open and fully closed.	[ ]	[ ]	[ ]	....
	e.	The subsidiary stop valve(s) is/are padlocked at its/their fully open position and is/are labelled "Normally Open 常開".	[ ]	[ ]	[ ]	....
	f.	The electrical monitoring switch(es), where provided, for the subsidiary stop valve(s) is/are intact, properly wired, and tested to be in working order.	[ ]	[ ]	[ ]	....
	g.	The cables and cable containment are intact, securely mounted, properly wired and free from cracks and undue deterioration.	[ ]	[ ]	[ ]	....
	h.	When an annunciator panel is provided to serve solely the sprinkler systems, additional items of inspection are required. The annual inspection for the additional items is recorded in Appendix XIII.			[ ]	....

10.	**Sprinkler and Multiple Jet Control**					
10.1	Sprinkler and Accessories (The following items are ascertained as far as reasonably practicable.)					
	a.	The sprinklers, including all accessories, where applicable, are intact, properly fixed, and free from leakage, distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The sprinklers are of the correct type in accordance with their application conditions.	[ ]	[ ]	[ ]	....
	c.	Except when dry pendent sprinkler(s) is/are used, sprinkler(s) in dry pipe, pre-action and/or recycling installation(s), where applicable, is/are installed upright.	[ ]	[ ]	[ ]	....

Annual Inspection Checklist for Sprinkler Systems

			Yes	No	N/A	Remarks
	d.	Sprinkler(s) in rack or under perforated shelf/platform/grating or other location where water from a higher sprinkler may cause wetting, where applicable, is/are fitted with a metal water shield of appropriate size.	[ ]	[ ]	[ ]	....
	e.	The sprinklers are free from any type of ornamentation or coating except as recommended by the manufacturer.	[ ]	[ ]	[ ]	....
	f.	The sprinklers are free from any foreign covering materials.	[ ]	[ ]	[ ]	....
	g.	Other than the exempted areas, sprinkler protection is provided throughout the building/premises.	[ ]	[ ]	[ ]	....
	h.	The coverage area, spacing and clearance of the sprinklers are in accordance with the requirements, having taken into consideration the installation conditions and various obstructions.	[ ]	[ ]	[ ]	....
	i.	The sprinklers are installed at the correct level(s) in relation to the apex, slab soffit, ceiling soffit, raised floor soffit, obstruction soffit, goods in storage rack/shelf or glazing as applicable, in accordance with the requirements.	[ ]	[ ]	[ ]	....
	j.	The sprinklers are installed at the proper orientation, in accordance with the requirements.	[ ]	[ ]	[ ]	....
	k.	Other than in-rack sprinklers and sprinklers for ceiling opening formed by escalator/stair, etc., where applicable, sprinklers are not closer than 2-m apart unless baffle plate(s) or intervening constructional feature(s) is/are present.	[ ]	[ ]	[ ]	....
	l.	Sufficient spare sprinklers, including different types, temperature ratings and K factors installed in the system, are provided.	[ ]	[ ]	[ ]	....
10.2	**Multiple Jet Control (MJC)** (where provided) Remarks: The annual inspection for MJC(s), where provided, is recorded in Appendix XI.				[ ]	If N/A, go to 10.3
10.3	Pipework, Fitting, Valve and Accessories (The following items are ascertained as far as reasonably practicable.)					
	a.	The pipework, valves, expansion joints, equipment and accessories as applicable are intact, securely supported, and free from leakage, distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The flexible drop(s), where provided, is/are installed in accordance with the listing requirements (including, inter alia, the maximum allowable number of turns, and the minimum radius of each turn required.)	[ ]	[ ]	[ ]	....
	c.	The support and brackets are intact and free from distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	d.	The automatic air vent valve(s), where provided, is/are intact, with the vent opening unobstructed (not capped closed).	[ ]	[ ]	[ ]	....

Annual Inspection Checklist for Sprinkler Systems

11.	Other Observations		Yes	No	N/A	Remarks
	a.	The occupancies are within the system design limitations.	[ ]	[ ]	[ ]	....
	b.	The goods storage arrangements are within the system design limitations.	[ ]	[ ]	[ ]	....
	c.	For pump rooms/enclosures, where applicable, the entrance door(s) is/are kept locked.	[ ]	[ ]	[ ]	....
	d.	For pump spaces, where applicable, the direct access to the pump space(s) is maintained available.	[ ]	[ ]	[ ]	....
	e.	The pump room(s)/enclosure(s)/space(s) as applicable is/are kept clear of storage and waste materials.	[ ]	[ ]	[ ]	....
	f.	The artificial lighting, where provided, in the sprinkler pump room/enclosure/space is in proper operation.	[ ]	[ ]	[ ]	....
	g.	The artificial lighting, where provided, in the sprinkler intermediate booster pump room/enclosure/space, where applicable, is in proper operation.	[ ]	[ ]	[ ]	....
	h.	For underground pump room, the submersible drainage pumping installation, where provided, is in working order.	[ ]	[ ]	[ ]	....
	i.	The direct access to the sprinkler control valve(s) is maintained available.	[ ]	[ ]	[ ]	....
	j.	The sprinkler control valve room(s)/enclosure(s)/space is/are kept clear of storage and waste materials and the operation of various trimmings and equipment is not obstructed.	[ ]	[ ]	[ ]	....
	k.	Every opening for the passage of pipes, cables, cable containments, etc., through all required fire barrier is protected with an appropriate fire stop to maintain the required fire resisting properties of the fire barrier.	[ ]	[ ]	[ ]	....

Annual Inspection Checklist for Sprinkler Systems

Notes:

1. All items under part 11 - Other Observations are not related to the functionality of fire service installations and equipment (FSIs) and hence shall not be reflected in FS 251. However, owners of FSIs bear the responsibility to rectify any irregularities noted thereunder.
2. This Checklist specifies the minimum requirements for annual inspection for sprinkler systems. Incomplete inspections or inspections not conducted in full accordance with this Checklist shall not be recognised as properly completed annual inspections.

Authorized Signatory of RFSIC:

_____ (Name in Full) _____(Signature)

_____ (Date)

Registered Fire Service Installation Contractor:

_____(FSD/RC No.) _____(Company Name)

_____(Company Stamp)

Annual Inspection Checklist for Sprinkler Systems

Table I

Schedule of Equipment

Building/Premises Address: _____

Building/Block Name: _____

Sprinkler Control Valve No.	Type	Floor level/Location of Valve	Floor Level/Location/Area being Served

Key for Control Valve Type: W – Wet Pipe, D – Dry Pipe, NI – Non-interlocked Pre-action, SI – Single-interlocked Pre-action, DI – Double-interlocked Pre-action, R – Recycling, Del - Deluge

Description	Total Quantity of Equipment
Water Columning Prevention Device	
Flow Switch	
Subsidiary Stop Valve	

Remarks: Use additional sheets where necessary.

Annual Inspection Checklist for Sprinkler Systems

Table II

Water Supply Flow Rate and Pressure Testing Record

Building/Premises Address: _____

Building/Block Name: _____

Item no.	**Floor Level(s) to be served**	**Height of Highest Sprinkler above Control Valve** (m)	**Water Supply Source** (Remark: Insert a "✓" in the [ ] for the applicable type(s) of water supply source)	**Flow Rate** (l/min)	**Pressure** (bar)
			Jockey Pump [ ]	N/A	_____
			Sprinkler Pump No. _____ [ ]	_____ _____ _____	_____ _____ _____
			Sprinkler Pump No. _____ [ ]	_____ _____ _____	_____ _____ _____
			Sprinkler Intermediate Booster Pump No. _____ [ ]	_____ _____ _____	_____ _____ _____
			Sprinkler Intermediate Booster Pump No. _____ [ ]	_____ _____ _____	_____ _____ _____
			Sprinkler Tank Gravity Supply [ ]	_____ _____	_____ _____
			Direct Town Main Supply [ ]	_____ _____	_____ _____

Remarks:

1. For jockey pump(s), only testing on zero-flow pressure (churning pressure) is required. The pressure measurement shall be taken at the sprinkler control valve.
2. Other than jockey pump(s), testing at the two rated flow characteristics (including "flow" and "maximum demand flow" as per EN 12845 (known as "low flow" and "high flow" as per BS 5306-2 and the two "characteristics not less than" as per FOC) are required. The flow and pressure measurements shall be taken at the sprinkler control valve.
3. For pumped supply where the pumps are designed to deliver up to the nominal data (nominal rating), testing at nominal data shall also be taken which shall be measured at the pump room/enclosure/space.
4. Use additional sheets where necessary.

Annual Inspection Checklist for Sprinkler Systems

Appendix I

Town Main/Internal Fire Main Connection

Remarks: Appendix I is only applicable to sprinkler systems that:

(a) is fed directly from the town main without a sprinkler tank; or

(b) the sprinkler tank is refilled directly from the town main without any transfer pumping installation; or

(c) is fed from an internal fire main which serves more than one building and/or system.

If not applicable, skip this Appendix.

A1.	Town Main/Internal Fire Main Connection		Yes	No	N/A	Remarks
	a.	All pipework, stop valve(s), check valve(s) and backflow preventer(s), as applicable, are securely supported, intact and free from leakage and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	All stop valves are duly lubricated and tested to operate freely between fully open and fully closed.	[ ]	[ ]	[ ]	....
	c.	All stop valves are set at their correct (fully open or fully closed) positions and labelled "Normally Open 常開" or "Normally Closed 常關" as appropriate.	[ ]	[ ]	[ ]	....
	d.	The handwheel operated stop valves other than the anti-pollution valve, where provided, are padlocked in their correct (fully open or fully closed) positions as appropriate.	[ ]	[ ]	[ ]	....
	e.	The anti-pollution valve, where provided, is labelled in terms of usage.	[ ]	[ ]	[ ]	....
	f.	The backflow preventer(s), where provided, is/are tested to be in working order.	[ ]	[ ]	[ ]	....
	g.	The electrical monitoring switch(es) for stop valves, where provided, is/are intact, properly wired, and tested to be in working order.	[ ]	[ ]	[ ]	....
	h.	The cables and cable containment for electrical monitoring switch(es), where provided, are intact, securely mounted, properly wired, and without undue deterioration.	[ ]	[ ]	[ ]	....

Annual Inspection Checklist for Sprinkler Systems

Appendix II

Sprinkler Pump Installation

Remark: Appendix II is only applicable to sprinkler systems equipped with sprinkler pumps. If not applicable, skip this Appendix.

A2.	Sprinkler Pump Installation		Yes	No	N/A	Remarks
A2.1	Pump Room/Enclosure (where applicable)				[ ]	If N/A, go to A2.2
	a.	The room(s)/enclosure(s) shelter(s) the pump(s) from tampering/inclement weather.	[ ]	[ ]	[ ]	....
	b.	The room(s)/enclosure(s) is/are properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
	c.	For diesel pump, where provided, there is sufficient ventilation to supply air for engine combustion, radiator cooling, and controlling engine maximum operating temperature.	[ ]	[ ]	[ ]	....
A2.2	Pump Space (for pumps mounted on spreaders or flat roofs, where applicable)				[ ]	If N/A, go to A2.3
	a.	The pump space(s) is/are properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
	b.	The electrical equipment, pump control panel(s) and cable connections as applicable within the pump space(s) are protected against ingress of water.	[ ]	[ ]	[ ]	....
A2.3	Pump Foundation					
	a.	The pump plinth(s)/spreader(s) is/are intact and free from deformation, settlement and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The anti-vibration mounting(s), where provided, is/are intact and free from undue settlement.	[ ]	[ ]	[ ]	....
A2.4	Pump Set (Pump and Driver)					
	a.	The pump set(s) together with the base plate(s) as applicable is/are intact, securely mounted and free from settlement.	[ ]	[ ]	[ ]	....
	b.	The guard(s) for the coupling/shaft/belt driving parts as applicable, is/are intact and securely mounted.	[ ]	[ ]	[ ]	....
	c.	The pump coupling cushions and shaft alignment are checked and re-aligned where necessary.	[ ]	[ ]	[ ]	....
	d.	The belts and pulleys, where provided, are intact and without cracks, damage and undue deterioration.	[ ]	[ ]	[ ]	....
	e.	The alignment and tightness of the belts, where provided, are tested and re-adjusted where necessary.	[ ]	[ ]	[ ]	....
	f.	The shaft bearings and shaft coupling are lubricated.	[ ]	[ ]	[ ]	....
	g.	The packing for the pump shaft(s) is checked and re-adjusted to suitable tightness where necessary.	[ ]	[ ]	[ ]	....

Annual Inspection Checklist for Sprinkler Systems

			Yes	No	N/A	Remarks
	h.	An air vent valve is provided at an appropriate position of the pump casing for pump(s) which is/are capable of trapping air inside the casing.	[ ]	[ ]	[ ]	....
	i.	The pump set(s) is/are kept fully primed and pump set(s) under negative suction condition, where applicable, is/are equipped with a priming tank.	[ ]	[ ]	[ ]	....
A2.5	Pipework, Valves, Equipment and Accessories					
	a.	The pipework, valves, strainers, expansion joints, flexible connectors, equipment and accessories as applicable are intact, securely supported, and free from leakage, distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The support and brackets are intact and free from distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	c.	The strainer(s) is/are free from blockage and the screen(s) inside is/are cleaned.	[ ]	[ ]	[ ]	....
	d.	The stop valves are duly lubricated and tested to operate freely between fully open and fully closed.	[ ]	[ ]	[ ]	....
	e.	The stop valves are padlocked in their correct (fully open or fully closed) positions and labelled "Normally Open 常開" or "Normally Closed 常關" as appropriate.	[ ]	[ ]	[ ]	....
	f.	The electrical monitoring switch(es) for stop valves, where provided, is/are intact, properly wired, and tested to be in working order.	[ ]	[ ]	[ ]	....
	g.	The pressure switch(es), where provided, is/are intact, properly wired, and labelled in terms of usage and pressure setting.	[ ]	[ ]	[ ]	....
	h.	The reading(s) on the pressure gauge(s) is/are within the acceptable range.	[ ]	[ ]	[ ]	....
	i.	The automatic air vent valve(s), where provided, is/are intact, with the vent opening unobstructed (not capped closed).	[ ]	[ ]	[ ]	....
A2.6	Electrical Equipment, Cable and Cable Containment					
	a.	The power supply switches, busbar chamber(s), pump control panel(s) and electrical equipment are intact, securely mounted, properly labelled and free from undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The fuses in the power supply circuit and control circuit as applicable are of the correct ratings and intact.	[ ]	[ ]	[ ]	....
	c.	The cables and cable containment are intact, securely mounted, properly wired, and free from undue deterioration.	[ ]	[ ]	[ ]	....
	d.	The power supply switches are tested to be operating properly and are switched on after the test.	[ ]	[ ]	[ ]	....
	e.	The components and wirings inside the pump control panel(s) are intact, properly wired and free from undue deterioration.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	f.	The control buttons, switches, indicators and meters as applicable are properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
	g.	The reading(s) on the voltmeter(s), where provided, is/are within the acceptable range.	[ ]	[ ]	[ ]	....
	h.	The control buttons and switches are tested to operate properly and are in the correct positions.	[ ]	[ ]	[ ]	....
	i.	The switch(es) for suspending pump operation, where provided, is/are in the correct position(s).	[ ]	[ ]	[ ]	....
	j.	The indicator(s), where provided, is/are tested to operate properly and are in proper status.	[ ]	[ ]	[ ]	....
	k.	The battery(ies), where provided, is/are properly mounted, and located where they are free from excessive temperature, vibration, mechanical injury and flooding.	[ ]	[ ]	[ ]	....
	l.	The battery(ies), where provided, is/are intact and free from swelling, electrolyte creepage, cracking, scorch mark, denting, leakage, unusual high temperature, undue corrosion and loose connections.	[ ]	[ ]	[ ]	....
	m.	For unsealed type battery(ies), where provided, the electrolyte levels are correct and the battery plates are submerged, and low electrolyte level cell(s), if any, is/are topped up with distilled/de-ionized water to the correct level.	[ ]	[ ]	[ ]	....
	n.	For unsealed type battery(ies), where provided, the densities of the electrolyte are tested by a hydrometer to be correct.	[ ]	[ ]	[ ]	....
	o.	For unsealed type battery(ies), where provided, the battery terminals are covered with protective gel.	[ ]	[ ]	[ ]	....
	p.	For battery(ies), where provided, the installation date is displayed conspicuously on the battery(ies), and battery(ies) which has/have exceeded its/their nominal design life (deemed as 4 years if unknown) is/are replaced with secondary battery(ies) having a nominal design life of not less than 4 years.	[ ]	[ ]	[ ]	....
	q.	The charger(s), where provided, is/are free from unusual loud noise, abnormally high temperature and evidence of damage.	[ ]	[ ]	[ ]	....
	r.	For charger(s), where provided, the steady state float charge voltage (i.e. at standby mode) to the battery is measured to be within the range (not too low or overcharged) as recommended by the battery manufacturer.	[ ]	[ ]	[ ]	....
	s.	For charger(s), where provided, upon simulation of a mains power supply failure to the charger(s), audio and visual fault alarm signals are properly given.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	t.	For battery(ies), where provided, upon simulation of a battery low voltage condition, audio and visual fault alarm signals are properly given.	[ ]	[ ]	[ ]	....
	u.	For diesel pump, where provided, having the a.c. power supply to the charger disconnected, the battery(ies) cranking voltage during all 6 attempts to start the engine exceeds 9 volts for a 12-volt system, and 18 volts for a 24-volt system.	[ ]	[ ]	[ ]	....
A2.7	As-built Framed Schematic					
	Legible as-built system schematic diagram(s) is/are displayed conspicuously at the pump room/enclosure/space.		[ ]	[ ]	[ ]	....
A2.8	Operation of Jockey Pump (where provided)				[ ]	If N/A, go to A2.9
	a.	The jockey pump can be started and stopped by the start and stop buttons on the pump control panel respectively.	[ ]	[ ]	[ ]	....
	b.	The jockey pump operates upon a system pressure drop and stops when the system pressure resumes. The pressure switch setting is checked and re-adjusted where necessary.	[ ]	[ ]	[ ]	....
	c.	For high rise system, the standing pressure (e.g. jockey pump cut-in pressure setting) at individual control valve(s) is not less than 125% of the static head difference between the highest sprinkler in individual installation(s) and the corresponding control valve(s).	[ ]	[ ]	[ ]	....
	d.	For jockey pump equipped with a priming tank, where applicable, the jockey pump starts when the water level in the priming tank drops to two-thirds of the normal level.	[ ]	[ ]	[ ]	....
	e.	Upon activation of the lock-off button and/or other switches, where provided, at the pump room/enclosure/space for suspending the operation of the jockey pump, the fault alarm signal(s), where provided, on the pump control panel and/or other control/indicating panel as applicable is/are in working order.	[ ]	[ ]	[ ]	....
	f.	The thermal overload relay and/or the like, where provided, can give fault signal indication (while not stopping pump operation).	[ ]	[ ]	[ ]	....
	g.	When the jockey pump operates, the discharge pressure reading is within acceptable range, and the discharge pressure is recorded in Table II.	[ ]	[ ]	[ ]	....
	h.	After running the jockey pump for not less than 10 minutes, the pump operation is free from abnormal noise, excessive vibration, undue leakage, overheating and other signs of malfunction. (Remark: A small drain valve may be set to discharge to effect cooling of the pump.)	[ ]	[ ]	[ ]	....
	i.	The jockey pump status indicator(s), where provided, on the pump control panel and/or other control/indicating panel as applicable is/are tested to be in working order by simulating respective scenarios.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
A2.9	Operation of Sprinkler Pump No. 1 and Sprinkler Pump No. 2 Remarks: Diesel pump, where provided, shall be assigned as Pump no. 2.					
	a.	Sprinkler pump no. 1 can be started and stopped by the corresponding start and stop buttons on the pump control panel respectively.	[ ]	[ ]	[ ]	.....
	b.	Ditto but for sprinkler pump no. 2.	[ ]	[ ]	[ ]	.....
	c.	When assigned as the duty pump, sprinkler pump no. 1 runs when the system pressure drops and can only be stopped manually within the pump room/enclosure/space after the system pressure resumes. The duty pump cut-in pressure setting is higher than: (a) the static head difference between the highest sprinkler [for high-rise system, the highest sprinkler in individual installation(s)] and the corresponding pump cut-in pressure switch(es), and (b) the corresponding standby pump cut-in pressure setting.	[ ]	[ ]	[ ]	.....
	d.	Ditto but for sprinkler pump no. 2 (when pump no. 2 is motor driven).	[ ]	[ ]	[ ]	.....
	e.	When sprinkler pump no. 1 is equipped with a priming tank, where applicable, sprinkler pump no. 1 starts when the water level in the priming tank drops to two-thirds of the normal level.	[ ]	[ ]	[ ]	.....
	f.	Ditto but for sprinkler pump no. 2.	[ ]	[ ]	[ ]	.....
	g.	Upon activation of the lock-off button and/or other switches, where provided, at the pump room/enclosure/space for suspending the operation of sprinkler pump no. 1, the fault alarm signal(s), where provided, on the pump control panel and/or other control/indicating panel as applicable is/are in working order.	[ ]	[ ]	[ ]	.....
	h.	Ditto but for sprinkler pump no. 2.	[ ]	[ ]	[ ]	.....
	i.	The thermal overload relay and/or the like, where provided, for sprinkler pump no. 1 can give fault signal indication (while not stopping pump operation).	[ ]	[ ]	[ ]	.....
	j.	Ditto but for sprinkler pump no. 2 (when pump no. 2 is motor driven).	[ ]	[ ]	[ ]	.....
	k.	When started, sprinkler pump no. 1 accelerates to full speed within an acceptable time frame.	[ ]	[ ]	[ ]	.....
	l.	When started, sprinkler pump no. 2 accelerates to full speed (to crank for diesel pump, where applicable) within an acceptable time frame.	[ ]	[ ]	[ ]	.....

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			Yes	No	N/A	Remarks
	m.	After running sprinkler pump no. 1 for not less than 10 minutes (30 minutes for diesel pump), the pump operation is free from abnormal noise, excessive vibration, undue leakage, overheating and other signs of malfunction. (Remark: Check whether there is a steady flow through the circulation pipe/relief valve for proper cooling of the pump. In the absence of circulation facilities, a small drain valve may be set to discharge during pump operation.)	[ ]	[ ]	[ ]	....
	n.	Ditto but for sprinkler pump no. 2.	[ ]	[ ]	[ ]	....
	o.	The anti-overheating circulating pipe/relief valve, where provided, operates properly when sprinkler pump no. 1 churns.	[ ]	[ ]	[ ]	....
	p.	Ditto but for sprinkler pump no. 2.	[ ]	[ ]	[ ]	....
	q.	Sprinkler pump no. 1 is tested to be capable of delivering adequate flow and pressure to the system and the results are recorded in Table II.	[ ]	[ ]	[ ]	....
	r.	Ditto but for sprinkler pump no. 2.	[ ]	[ ]	[ ]	....
	s.	When sprinkler pump no. 1 is delivering the rated flow, the voltage readings and current readings at all phases are within acceptable ranges.	[ ]	[ ]	[ ]	....
	t.	Ditto but for sprinkler pump no. 2 (when pump no. 2 is motor driven).	[ ]	[ ]	[ ]	....
	u.	The sprinkler pump no. 1 status indicator(s), where provided, on the pump control panel and/or other control/indicating panel as applicable is/are tested to be in working order by simulating the respective scenarios.	[ ]	[ ]	[ ]	....
	v.	Ditto but for sprinkler pump no. 2.	[ ]	[ ]	[ ]	....
	w.	When sprinkler pump no. 2 is assigned as the standby pump and when the duty pump is actuated due to system pressure drop but the system pressure continues to drop, sprinkler pump no. 2 operates automatically to take over sprinkler pump no. 1. The standby pump cut-in pressure setting is higher than the static head difference between the highest sprinkler [for high-rise system, the highest sprinkler in individual installation(s)] and the corresponding pump cut-in pressure switch(es).	[ ]	[ ]	[ ]	....
	x.	Ditto but with sprinkler pump no. 1 assigned as the standby pump and sprinkler pump no. 2 assigned as the duty pump (applicable when both pumps are motor driven).	[ ]	[ ]	[ ]	....
	y.	When a diesel engine driven pump is provided, additional items of inspection are required. The annual inspection for the additional items is recorded in Appendix III.			[ ]	....

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Appendix III

Additional Inspection Items for Diesel Engine Driven Pump Set

Remarks: Appendix III is only applicable to diesel engine driven pump sets. If not applicable, skip this Appendix.

A3	Diesel Engine Driven Pump Set		Yes	No	N/A	Remarks
A3.1	Pump Set (Pump and Diesel Engine)					
	a.	The engine air intake filter is inspected to be clean and replaced where necessary.	[ ]	[ ]	[ ]	....
	b.	The fuel oil filter is inspected to be free from clogging.	[ ]	[ ]	[ ]	....
	c.	The fuel oil filter installed 4 or more years ago is replaced and the replacement date is displayed on the pump.	[ ]	[ ]	[ ]	....
	d.	The lubricating oil filter is inspected to be clean and replaced where necessary.	[ ]	[ ]	[ ]	....
	e.	The lubricating oil filter installed 4 or more years ago is replaced and the replacement date is displayed on the pump.	[ ]	[ ]	[ ]	....
	f.	The lubricating oil is inspected to be at a correct level and replenished to the required level where necessary.	[ ]	[ ]	[ ]	....
	g.	The lubricating oil which was last replaced (except minor topping up) 4 or more years ago is replaced and the replacement date is displayed on the pump.	[ ]	[ ]	[ ]	....
	h.	The lubricating oil pressure shown on the lubricating oil pressure gauge, where provided, is inspected to be at a correct level.	[ ]	[ ]	[ ]	....
	i.	The liquid in the cooling system, where applicable, is inspected to be at a correct level and topped up where necessary.	[ ]	[ ]	[ ]	....
	j.	The exhaust pipe, silencer and insulation are sufficiently and securely supported, intact and free from leakage.	[ ]	[ ]	[ ]	....
	k.	The exhaust pipe is terminated at the outside at a location where the exhaust will discharge safely, without affecting the pump operation, while protected from rain water entry.	[ ]	[ ]	[ ]	....
	l.	The step-by-step sequence for emergency manual operation is displayed on the engine.	[ ]	[ ]	[ ]	....
A3.2	Pump Operation					
	a.	The pump can be started by the emergency manual start button at the pump control panel.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	b.	By closing the fuel supply valve, the starting sequence and the battery supply are tested to be capable of starting the engine for 6 attempts, and after the 6 attempts, audible and visual fault alarms are given at the pump control panel and/or other control/indicating panel as applicable.	[ ]	[ ]	[ ]	....
	c.	The engine speed is tested to vary within ±10% when the discharge flow rate varies from zero flow to nominal data (nominal rating) and the governor setting is adjusted where necessary.	[ ]	[ ]	[ ]	....
A3.3	Fuel Tank					
	a.	The tank structure, pipework, valves, where applicable, are intact, properly supported and free from leakage, distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The stop valve(s) at tank connection(s) is/are duly lubricated and tested to operate freely between fully open and fully closed.	[ ]	[ ]	[ ]	....
	c.	The stop valve at tank connection(s) are padlocked in the correct (fully open or fully closed) positions and labelled "Normally Open 常開" or "Normally Closed 常關" as appropriate.	[ ]	[ ]	[ ]	....
	d.	The tank drain valve is plugged/capped closed.	[ ]	[ ]	[ ]	....
	e.	The fuel level gauge, where provided, is intact, properly labelled and clearly indicates the fuel level.	[ ]	[ ]	[ ]	....
	f.	The tank is properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
	g.	The tank and all fuel pipes are properly earthed.	[ ]	[ ]	[ ]	....
	h.	The tank is topped up to the required capacity at the conclusion of the inspection.	[ ]	[ ]	[ ]	....

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Appendix IV

Sprinkler Intermediate Booster Pump Installation

Remarks: Appendix IV is only applicable to sprinkler intermediate booster pumps. If not applicable, skip this Appendix.

A4.	Sprinkler Intermediate Booster Pump Installation		Yes	No	N/A	Remarks
A4.1	Pump Room/Enclosure (as applicable)					
	a.	The room(s)/enclosure(s) shelter(s) the pumps from tampering/inclement weather.	[ ]	[ ]	[ ]	....
	b.	The room(s)/enclosure(s) is/are properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
A4.2	Pump Foundation					
	a.	The pump plinth(s)/spreader(s) is/are intact, and free from deformation, settlement and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The anti-vibration mountings, where provided, are intact and free from undue settlement.	[ ]	[ ]	[ ]	....
A4.3	Pump Set (Pump and Driver)					
	a.	The pump set(s) together with the base plate(s) as applicable is/are intact, securely mounted and free from settlement.	[ ]	[ ]	[ ]	....
	b.	The guard(s) for the coupling/shaft/belt-driving parts, as applicable, is/are intact and securely mounted.	[ ]	[ ]	[ ]	....
	c.	The pump coupling cushions and shaft alignment are checked and re-aligned where necessary.	[ ]	[ ]	[ ]	....
	d.	The belts and pulleys, where provided, are intact and without cracks, damage and undue deterioration.	[ ]	[ ]	[ ]	....
	e.	The alignment and tightness of the belts, where provided, are tested and re-adjusted where necessary.	[ ]	[ ]	[ ]	....
	f.	The shaft bearings and shaft coupling are lubricated.	[ ]	[ ]	[ ]	....
	g.	The packing for the pump shaft(s) is checked and re-adjusted to suitable tightness where necessary.	[ ]	[ ]	[ ]	....
	h.	An air vent valve is provided at the appropriate position of the pump casing for pump(s) which is/are capable of trapping air inside the casing.	[ ]	[ ]	[ ]	....
A4.4	Pipework, Valves, Equipment and Accessories					
	a.	The pipework, valves, strainers, expansion joints, flexible connectors, equipment and accessories as applicable are intact, securely supported, and free from leakage, distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The support and brackets are intact and free from distortion and undue corrosion.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	c.	The strainer(s) is/are free from blockage and the screen(s) inside is/are cleaned.	[ ]	[ ]	[ ]	....
	d.	The stop valves are duly lubricated and tested to operate freely between fully open and fully closed.	[ ]	[ ]	[ ]	....
	e.	The stop valves are padlocked in the correct (fully open or fully closed) positions and labelled "Normally Open 常開" or "Normally Closed 常關" as appropriate.	[ ]	[ ]	[ ]	....
	f.	The electrical monitoring switch(es) for stop valves, where provided, is/are intact, properly wired, and tested to be in working order.	[ ]	[ ]	[ ]	....
	g.	The pressure switch(es), where provided, is/are intact, properly wired and labelled in terms of usage and pressure setting.	[ ]	[ ]	[ ]	....
	h.	The reading(s) on the pressure gauge(s) is/are within the acceptable range.	[ ]	[ ]	[ ]	....
	i.	The automatic air vent valve(s), where provided, is/are intact, with the vent opening unobstructed (not capped closed).	[ ]	[ ]	[ ]	....
	j.	The pipes between the sprinkler inlet(s) and the intermediate booster pumps are tested to be fully primed with water.	[ ]	[ ]	[ ]	....
A4.5	Electrical Equipment, Cables and Cable Containment					
	a.	The power supply switches, busbar chamber(s), pump control panel(s) and electrical equipment are intact, securely mounted, properly labelled and free from undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The fuses in the power supply circuit and control circuit as applicable are of the correct ratings and intact.	[ ]	[ ]	[ ]	....
	c.	The cables and cable containment are intact, securely mounted, properly wired, and free from undue deterioration.	[ ]	[ ]	[ ]	....
	d.	The power supply switches are tested to be operating properly and are switched on after the test.	[ ]	[ ]	[ ]	....
	e.	The components and wirings inside the pump control panel(s) are intact, properly wired and free from undue deterioration.	[ ]	[ ]	[ ]	....
	f.	The control buttons, switches, indicators and meters as applicable are properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
	g.	The reading(s) on the voltmeter(s), where provided, is/are within the acceptable range.	[ ]	[ ]	[ ]	....
	h.	The control buttons and switches are tested to operate properly and are in the correct positions.	[ ]	[ ]	[ ]	....
	i.	The switch(es) for suspending pump operation, where provided, is/are in the correct position(s).	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	j.	The indicator(s), where provided, is/are tested to operate properly and are in proper status.	[ ]	[ ]	[ ]	....
A4.6	As-built Framed Schematic					
	Legible as-built system schematic diagram(s) is/are displayed conspicuously at the pump room/enclosure/space.		[ ]	[ ]	[ ]	....
A4.7	Operation of Sprinkler Intermediate Booster Pumps					
	a.	Sprinkler intermediate booster pump no. 1 can be started and stopped by the corresponding start and stop buttons on the pump control panel.	[ ]	[ ]	[ ]	....
	b.	Ditto but for sprinkler intermediate booster pump no. 2.	[ ]	[ ]	[ ]	....
	c.	When assigned as the duty pump, sprinkler intermediate booster pump no. 1 operates upon receipt of a pump starting signal from the start button at the corresponding sprinkler inlet(s) and can only be stopped manually by pressing the stop button at the same F.S. inlet.	[ ]	[ ]	[ ]	....
	d.	Ditto but for sprinkler intermediate booster pump no. 2.	[ ]	[ ]	[ ]	....
	e.	When started, sprinkler intermediate booster pump no. 1 accelerates to full speed within an acceptable time frame.	[ ]	[ ]	[ ]	....
	f.	Ditto but for sprinkler intermediate booster pump no. 2.	[ ]	[ ]	[ ]	....
	g.	Upon activation of the lock-off button and/or other switches, where provided, at the pump room/enclosure for suspending the operation of sprinkler intermediate booster pump no. 1, the fault alarm signal(s), where provided, on the pump control panel and/or other control/indicating panel as applicable is/are in working order.	[ ]	[ ]	[ ]	....
	h.	Ditto but for sprinkler intermediate booster pump no. 2.	[ ]	[ ]	[ ]	....
	i.	The thermal overload relay and/or the like, where provided, for sprinkler intermediate booster pump no. 1 can give fault signal indication (while not stopping pump operation).	[ ]	[ ]	[ ]	....
	j.	Ditto but for sprinkler intermediate booster pump no. 2.	[ ]	[ ]	[ ]	....
	k.	The sprinkler intermediate booster pump no. 1 status indicator(s), where provided, on the pump control panel and/or other control/indicating panel as applicable is/are tested to be in working order by simulating the respective scenarios.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	l.	Ditto but for sprinkler intermediate booster pump no. 2.	[ ]	[ ]	[ ]	....
	m.	Sprinkler intermediate booster pump no. 1, when assigned as the standby pump, is energized within 15 seconds upon failure of sprinkler intermediate booster pump no. 2, which is assigned as the duty pump.	[ ]	[ ]	[ ]	....
	n.	Ditto but with sprinkler intermediate booster pump no. 2 assigned as the standby pump and sprinkler intermediate booster pump no. 1 assigned as the duty pump.	[ ]	[ ]	[ ]	....

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Appendix V

Pressure Reducing Valve (PRV)

Remarks: Appendix V is only applicable to sprinkler systems equipped with pressure reducing valve(s). If not applicable, skip this Appendix.

A5.	Pressure Reducing Valve (PRV)		Yes	No	N/A	Remarks
	a.	The PRV(s) and the associated stop valve(s), strainer(s), pressure gauge(s), pressure switch(es), pipework and accessories, where applicable, are intact, securely supported and free from leakage and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The PRV(s) is/are labelled in terms of the pressure setting and usage.	[ ]	[ ]	[ ]	....
	c.	The stop valve(s), where provided, is/are padlocked in the correct (fully open or fully closed) position(s) and labelled "Normally Open 常開" or "Normally Closed 常關" as appropriate.	[ ]	[ ]	[ ]	....
	d.	The stop valve(s) is/are duly lubricated and tested to operate freely between fully open and fully closed.	[ ]	[ ]	[ ]	....
	e.	The strainer(s), where provided, is/are free from blockage and the screen(s) inside is/are cleaned.	[ ]	[ ]	[ ]	....
	f.	The PRV(s) is/are tested to verify the downstream pressures under flow and no-flow conditions are within the acceptable range and the PRV(s) operate(s) properly and free from any abnormal noise, excessive vibration and other signs of cavitation.	[ ]	[ ]	[ ]	....
	g.	The reading(s) on the pressure gauge(s), where provided, is/are within the acceptable range.	[ ]	[ ]	[ ]	....
	h.	For pilot operated PRV(s), where applicable, any air trapped in the cover chamber(s) is/are released and the chamber(s) is/are tested to be free from air pocket.	[ ]	[ ]	[ ]	....
	i.	The pressure switch(es), where provided, is/are intact and labelled in terms of usage and pressure setting.	[ ]	[ ]	[ ]	....
	j.	The pressure switch(es), where provided, is/are tested to be in working order. The pressure switch setting is correct and re-adjusted where necessary.	[ ]	[ ]	[ ]	....
	k.	The electrical monitoring switch(es) for stop valves is/are intact, properly wired, and tested to be in working order.	[ ]	[ ]	[ ]	....
	l.	The cables and cable containment are intact, securely mounted, properly wired and free from cracks and undue deterioration.	[ ]	[ ]	[ ]	....

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Appendix VI

Air Compressor

Remarks: Appendix VI is only applicable to sprinkler systems equipped with air compressor(s). If not applicable, skip this Appendix.

A6		**Air Compressor** for Installation Operating in Dry Mode, including dry pipe, pre-action and/or recycling installations as applicable	**Yes**	**No**	**N/A**	**Remarks**
	a.	The air compressor set(s), including all valves, trimmings, gauge(s), belts and pulleys, guard, pipework and accessories, where applicable, are intact, securely supported and free from crack, undue deterioration and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The condition of the desiccant dryer(s), where provided, is inspected to be in working order and wet desiccant, if any, is replaced.	[ ]	[ ]	[ ]	....
	c.	The alignment and tightness of the belts, where provided, are tested to be acceptable and re-adjusted where necessary.	[ ]	[ ]	[ ]	....
	d.	The shaft bearings and shaft coupling, where applicable, are lubricated.	[ ]	[ ]	[ ]	....
	e.	The air supply pipe strainer(s), where provided, and the air inlet filter at the compressor(s) is/are cleaned.	[ ]	[ ]	[ ]	....
	f.	The operation of the air compressor set(s) is tested to be in working order. The settings of compressor control pressure switch(es), pressure regulating valve and pressure relief valve, where applicable, are correct as recommended by the sprinkler control valve manufacturer and re-adjusted where necessary.	[ ]	[ ]	[ ]	....
	g.	The power supply switches, pressure switch(es) and other electrical components, where applicable, are intact, securely mounted, properly wired and free from undue deterioration and corrosion.	[ ]	[ ]	[ ]	....
	h.	The cables and cable containment are intact, securely mounted, properly wired and free from undue deterioration and corrosion.	[ ]	[ ]	[ ]	....

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Appendix VII

Operation of Dry Pipe Valve

Remarks: Appendix VII is only applicable to sprinkler systems equipped with dry pipe valve(s). If not applicable, skip this Appendix.

A7	Operation of Dry Pipe Valve		Yes	No	N/A	Remarks
	a.	The "low air pressure" alarm pressure switch(es) is/are tested to be in working order. The setting of the pressure switch(es) is correct as recommended by the sprinkler control valve manufacturer and re-adjusted where necessary.	[ ]	[ ]	[ ]	....
	b.	The dry pipe valve(s) is/are tested to trip properly when the system air pressure drops to the level as recommended by the sprinkler control valve manufacturer, and the "fire" alarm pressure switch(es), where provided, and the alarm gong(s) is/are in working order.	[ ]	[ ]	[ ]	....
	c.	At the conclusion of the dry pipe valve(s) operation inspection, the water that entered the downstream side of the dry pipe valve(s) beyond the priming water test valve is drained away.	[ ]	[ ]	[ ]	....
	d.	The priming water at the dry pipe valve(s) is verified to be at correct level and re-primed to the correct level where necessary.	[ ]	[ ]	[ ]	....

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Appendix VIII

Operation of Pre-action Valve and/or Recycling Valve

Remarks: Appendix VIII is only applicable to sprinkler systems equipped with pre-action valve(s) and/or recycling valve(s). If not applicable, skip this Appendix.

A8.	**Operation of Pre-action Valve** including non-interlocked, single interlocked and double-interlocked installations (Remark: Type 1, Type 2, Type A and Type B to FOC/LPC Rules terminology for pre-action installations) **and/or Recycling Valve** as applicable		**Yes**	**No**	**N/A**	**Remarks**
	a.	Without tripping the pre-action/recycling valve(s) as appropriate, the "low air pressure" alarm pressure switch(es), where provided, is/are tested to be in working order by releasing the system air pressure to the level as recommended by the sprinkler control valve manufacturer. The setting of the pressure switch(es) is correct and re-adjusted where necessary.	[ ]	[ ]	[ ]	....
	b.	By opening the manual release unit, the pre-action/recycling valve(s) as appropriate is/are tested to trip properly and the "valve tripped"/"fire" alarm pressure switch(es), where provided, and the alarm gong(s) is/are in working order.	[ ]	[ ]	[ ]	....
	c.	By opening the remote manual release unit, where provided, the pre-action/recycling valve(s) as appropriate is/are tested to trip properly and the "valve tripped"/"fire" alarm pressure switch(es), where provided, and the alarm gong(s) is/are in working order.	[ ]	[ ]	[ ]	....
	d.	For fire detector actuated non-interlocked pre-action, single-interlocked pre-action and/or recycling valve(s), the pre-action/recycling valve(s) as appropriate is/are tested to trip properly by simulating a fire detector activated alarm signal and the "valve tripped"/"fire" alarm pressure switch(es), where provided, and the alarm gong(s) is/are in working order.	[ ]	[ ]	[ ]	....
	e.	For double-interlocked pre-action valve(s), the pre-action valve(s) is/are tested to operate properly (i.e. without tripping) by simulating a fire detector activated alarm signal or a pilot sprinkler activated situation as appropriate.	[ ]	[ ]	[ ]	....
	f.	For single-interlocked pre-action, double-interlocked pre-action and/or recycling valve(s), by simulating a sprinkler activated situation, the pre-action/recycling valve(s) as appropriate is/are tested to operate properly (i.e. without tripping).	[ ]	[ ]	[ ]	....
	g.	For non-interlocked pre-action valve(s), by simulating a sprinkler activated situation, the pre-action valve(s) is/are tested to trip properly and the "valve tripped"/"fire" alarm pressure switch(es), where provided, and the alarm gong(s) is/are in working order.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	h.	For double-interlocked pre-action valve(s), the pre-action valve(s) is/are tested to trip properly by simulating both: (i) a sprinkler activated situation and (ii) either a fire detector activated signal or a pilot sprinkler activated situation as applicable, and the "valve tripped"/"fire" alarm pressure switch(es), where provided, and the alarm gong(s) is/are in working order.	[ ]	[ ]	[ ]	.....
	i.	For recycling valve(s), the recycling valve(s) is/are tested to trip properly by simulating a fire detector activated alarm signal. Afterwards, by resetting the fire detector activation signal, the recycling valve(s) is/are verified to be closed properly 5 minutes (or other preset time delay as appropriate) after the signal is reset. Afterwards, by simulating a fire detector activation signal, the recycling valve(s) is/are tested to trip again properly.	[ ]	[ ]	[ ]	.....
	j.	At the conclusion of the pre-action/recycling valve(s) operation inspection, the water that entered the downstream side of the pre-action/recycling valve(s) beyond the riser check valve is drained away.	[ ]	[ ]	[ ]	.....
	k.	For fire detector actuated pre-action valve(s) and/or recycling valve(s), additional items of inspection are required. The annual inspection for the additional items is recorded in Appendix XIV.			[ ]	.....

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Appendix IX

Operation of Deluge Valve

Remarks: Appendix IX is only applicable to sprinkler systems equipped with deluge valve(s). If not applicable, skip Appendix IX.

A9	Operation of Deluge Valve		Yes	No	N/A	Remarks
	a.	Without tripping the deluge valve(s), the "pilot line low pressure"/"diaphragm chamber low pressure" alarm pressure switch(es), where provided, is/are tested to be in working order by releasing the pilot line/diaphragm chamber pressure to the level as recommended by the deluge valve manufacturer. The setting of the pressure switch(es) is/are correct and re-adjusted where necessary.	[ ]	[ ]	[ ]	....
	b.	By opening the manual release unit, the deluge valve(s) is/are tested to trip properly and the "valve tripped"/"fire" alarm pressure switch(es), where provided, and the alarm gong(s) is/are in working order.	[ ]	[ ]	[ ]	....
	c.	By opening the remote manual release unit, where provided, the deluge valve(s) is/are tested to trip properly and the "valve tripped"/"fire" alarm pressure switch(es), where provided, and the alarm gong(s) is/are in working order.	[ ]	[ ]	[ ]	....
	d.	For deluge valve(s) actuated by fire detectors, by simulating a fire detector activated alarm signal, the deluge valve(s) is/are tested to trip properly and the "valve tripped"/"fire" alarm pressure switch(es), where provided, and the alarm gong(s) is/are in working order.	[ ]	[ ]	[ ]	....
	e.	For fire detector actuated deluge valve(s), additional items of inspection are required. The annual inspection for the additional items is recorded in Appendix XIV.			[ ]	....

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Appendix X

Water Columning Prevention Device

Remarks: Appendix X is only applicable to sprinkler systems equipped with water columning prevention device(s). If not applicable, skip this Appendix.

A10.	Water Columning Prevention Device		Yes	No	N/A	Remarks
	a.	The pipework, fittings, valves, gauge(s), header tank and pressure switch(es) as applicable at the water columning prevention device(s) are intact, securely supported, and free from leakage and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The structure of the header tank(s) is intact, properly roofed, and free from leakage and obvious damage.	[ ]	[ ]	[ ]	....
	c.	The support and brackets are intact and free from distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	d.	The header tank(s) is/are upholding water at the correct level.	[ ]	[ ]	[ ]	....
	e.	The water inside the header tank(s) is clean and without debris and aquatic growth.	[ ]	[ ]	[ ]	....
	f.	The header tank(s) is/are properly labelled in terms of usage and capacity.	[ ]	[ ]	[ ]	....
	g.	The reading(s) on the pressure gauge(s) is/are within the acceptable range.	[ ]	[ ]	[ ]	....
	h.	The stop valves and ball float valve at the header tank(s) are duly lubricated and tested to operate freely between fully open and fully closed.	[ ]	[ ]	[ ]	....
	i.	The stop valves at the header tank(s) are padlocked in their correct (fully open or fully closed) positions and labelled "Normally Open 常開" or "Normally Closed 常關" as appropriate.	[ ]	[ ]	[ ]	....
	j.	The pressure switch(es), where provided, is/are intact and labelled in terms of usage and pressure setting.	[ ]	[ ]	[ ]	....
	k.	The pressure switch(es), where provided, is/are tested to be in working order. The setting of the pressure switch(es) is correct and re-adjusted where necessary.	[ ]	[ ]	[ ]	....
	l.	The electrical monitoring switch(es) for stop valves, where provided, is/are intact, properly wired, and tested to be in working order.	[ ]	[ ]	[ ]	....
	m.	The cables and cable containment are intact, securely mounted, properly wired and free from cracks and undue deterioration.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	n.	In each water columning prevention device riser, by opening the test valve at the bottom of the lowest header tank in the riser, the ball float valve(s) at the same header tank and at the header tank(s) on higher level in the same riser open(s), if any, to fill the tank(s) and the pump starting pressure switch(es) near the topmost header tank in the riser activate(s) properly.	[ ]	[ ]	[ ]	....

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Appendix XI

Multiple Jet Control

Remarks: Appendix XI is only applicable to sprinkler systems equipped with multiple jet control(s). If not applicable, skip this Appendix.

A11.	Multiple Jet Control (MJC)		Yes	No	N/A	Remarks
	a.	The MJC(s) is/are of the appropriate type(s) (e.g. size, number of outlets, rated temperature, etc.)	[ ]	[ ]	[ ]	....
	b.	The MJC(s), including the body, the heat sensing element and the metron, are intact, properly fixed, and free from leakage and undue corrosion.	[ ]	[ ]	[ ]	....
	c.	The MJC(s), including the frame arms, the heat sensing element and the metron, are free from any type of ornamentation or coating applied after dispatch from production factory.	[ ]	[ ]	[ ]	....
	d.	The MJC(s) is/are free from any foreign covering materials.	[ ]	[ ]	[ ]	....
	e.	For fire detector actuated MJC(s), additional items of inspection are required. The annual inspection for the additional items is recorded in Appendix XIV.			[ ]	....

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Appendix XII

Sprinkler Installation within Residential Flat

Remarks: (a) Skip this Appendix when the annual inspection for the sprinkler installation where provided within residential flats are covered in Section 10 of this Checklist.

(b) In case the annual inspection for the building has been completed but with the sprinkler installation within one or more residential flats excluded, the annual inspection for such outstanding residential flat(s) may be recorded in this Appendix.

RFSIC Ref.: .....

Serial no. of FS 251: .....

Completion Date of Annual Inspection: .....

Building/Premises Address: .....

.....

The annual inspection is conducted in accordance with the appropriate version of Codes of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment published by the Director of Fire Services. In this Checklist, items required in relevant Sprinkler Installation Rules and applicable to the system(s) in the premises shall be inspected and/or tested.

A.12	**Sprinkler Installation within Residential Flat**					
A12.1	Sprinkler and Accessories (The following items are ascertained as far as reasonably practicable.)		**Yes**	**No**	**N/A**	**Remarks**
	a.	The sprinklers including all accessories, where applicable, are intact, properly fixed, and free from leakage, distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The sprinklers are of the correct type in accordance with their application conditions.	[ ]	[ ]	[ ]	....
	c.	The sprinklers are free from any type of ornamentation or coating except as recommended by the manufacturer.	[ ]	[ ]	[ ]	....
	d	The sprinklers are free from any foreign covering materials.	[ ]	[ ]	[ ]	....
	e.	Other than the exempted areas, sprinkler protection is provided throughout the premises.	[ ]	[ ]	[ ]	....
	f.	The coverage area, spacing and clearance of the sprinklers are in accordance with the requirements, having taken into consideration the installation conditions and various obstructions.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	g.	The sprinklers are installed at the correct level(s) in relation to the apex, slab soffit, ceiling soffit or obstruction soffit as applicable, in accordance with the requirements.	[ ]	[ ]	[ ]	....
	h.	The sprinklers are installed at the proper orientation, in accordance with the requirements.	[ ]	[ ]	[ ]	....
	i.	The sprinklers are not closer than 2-m apart unless baffle plate(s) or intervening constructional feature(s) is/are present.	[ ]	[ ]	[ ]	....
A12.2	Pipework, Fitting, Valve and Accessories					
	a.	The pipework, valves and accessories as applicable are intact, securely supported, and free from leakage, distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The support and brackets are intact and free from distortion and undue corrosion.	[ ]	[ ]	[ ]	....
	c.	The automatic air vent valve(s), where provided, is/are intact, with the vent opening unobstructed (not capped closed).	[ ]	[ ]	[ ]	....

Authorized Signatory of RFSIC:

_____ (Name in Full) _____(Signature)

_____ (Date)

Registered Fire Service Installation Contractor:

_____(FSD/RC No.) _____(Company Name)

_____(Company Stamp)

Annual Inspection Checklist for Sprinkler Systems

Appendix XIII

Sprinkler System Annunciator Panel

Remarks: Appendix XIII is only applicable when an annunciator panel is provided to serve solely the sprinkler systems. If not applicable, skip this Appendix.

A13.	**Sprinkler System Annunciator Panel**					
A13.1	Panel Installation		**Yes**	**No**	**N/A**	**Remarks**
	a.	The panel(s) is/are intact, securely mounted, properly labelled and free from undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The control buttons, switches and indicators, where provided, are properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
	c.	The control buttons and switches, where provided, are tested to operate properly and are in the correct positions.	[ ]	[ ]	[ ]	....
	d.	The indicator(s) is/are tested to operate properly and are in proper status.	[ ]	[ ]	[ ]	....
	e.	The built-in alarm buzzer, where provided, is tested to operate properly.	[ ]	[ ]	[ ]	....
	f.	The zoning arrangement of flow switch(es), other fire alarm initiation device(s), electrical monitoring switch(es) for stop valve, pump status indications and/or other system status indication(s), where applicable, conforms with the requirements.	[ ]	[ ]	[ ]	....
	g.	The fuse(s) in the power supply circuit and control circuit as applicable is/are of the correct rating and intact.	[ ]	[ ]	[ ]	....
	h.	The circuit board(s), relay(s), timer(s), interface module(s), switch(es), circuit breaker(s), indicator(s), terminal block(s) and other components, where applicable, and the wirings inside the sprinkler system annunciator panel(s) are intact, properly wired and free from any sign of damage/overheating and undue deterioration.	[ ]	[ ]	[ ]	....
	i.	For systems equipped with a direct telephone link (DTL) connection, the "Power On" lamp indicator and the "Normal" lamp indicator at the DTL fire signal box are lit and free from any "Fire Alarm" indication.	[ ]	[ ]	[ ]	....
	j.	The battery(ies), where provided, is/are intact, within its/their nominal design life and free from swelling, electrolyte creepage, cracking, scorch mark, denting, leakage, unusually high temperature, undue corrosion and loose connections.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	k.	The battery(ies), where provided, is/are marked with the date (month/year) of installation, and battery(ies) which has/have exceeded its/their nominal design life (deemed as 4 years if unknown) is/are replaced with secondary battery(ies) having a nominal design life of not less than 4 years.	[ ]	[ ]	[ ]	....
	l.	The cables and cable containment are intact, securely mounted, properly wired, and free from undue deterioration.	[ ]	[ ]	[ ]	....
A13.2	Audio Fire Alarm Device Installation					
	The audio fire alarm device(s) connected to the system is/are intact, securely mounted, properly labelled and free from undue corrosion.		[ ]	[ ]	[ ]	....
A13.3	Electrical Components, Cable and Cable Containment					
	a.	All power supply points, interfacing modules, isolating modules, marshalling/interfacing boxes and components where applicable are intact, securely mounted, properly labelled, and free from undue deterioration.	[ ]	[ ]	[ ]	....
	b.	For systems required to comply with BS 5839-1:1988 and relevant circular letters, other than when any exemption condition is valid, in applications in which prolonged operation (i.e. cables for connecting components like fire alarm devices, sprinkler annunciator panel(s), repeater panel(s), mimic panel(s) and/or power supply) is required where applicable, mineral-insulated copper-sheathed cables or cables complying with BS 6387 AWX/SWX or other fire resisting cables of the required fire resisting rating are used.	[ ]	[ ]	[ ]	....
	c.	For systems required to comply with BS 5839-1:2002+A2:2008 or BS 5839-1:2017 and relevant circular letters, other than when any exemption condition is valid, the cables including the supports used for: (i) the critical signal paths (signal paths between fire alarm initiation points and fire alarm devices), (ii) the extra low voltage supply from an external power supply unit, (iii) the final circuit providing low voltage mains supply to the system, and (iv) the power supply to fire alarm devices, where applicable, are fire resisting cables of the required fire resisting rating.	[ ]	[ ]	[ ]	....
	d.	Cables other than mineral-insulated copper-sheathed cables and steel-wire-armoured cables are appropriately protected against mechanical damage and rodent attack.	[ ]	[ ]	[ ]	....
	e.	All devices, components and wirings installed within or passing through areas classified as a potentially hazardous area, where applicable, are explosion-protected types suitable for the particular area classification, and of the appropriate apparatus group and temperature class.	[ ]	[ ]	[ ]	....
	f.	The cables and cable containment are intact, securely mounted, properly wired, and free from undue deterioration.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
A13.4	System Operation Notes: When the testing involves the sounding of audio fire alarm device(s), each count of sounding should normally last for not more than 5 seconds. Before the next count of the test, cease for not less than 5 seconds. In case of having a real fire during the testing, the sounding of audio fire alarm device(s) should normally be continuous and not be interrupted (other than when the system is interlocked with an audio/visual advisory system). In this way, the occupiers would be able to distinguish between real fire alarms and system testing.					
	a.	Upon activation of a flow switch or another fire alarm initiation device, audio alarm and visual fire alarm indications(s) are properly given at the sprinkler system annunciator panel.	[ ]	[ ]	[ ]	....
	b.	Upon activation of a flow switch or another fire alarm initiation device, the fire alarm signal is properly transmitted to and displayed at other control/indicating panel(s), where applicable.	[ ]	[ ]	[ ]	....
	c.	Upon activation of a flow switch or another fire alarm initiation device, the fire alarm device(s) within the corresponding alarm zone(s), where connected to the system, operate(s) continuously.	[ ]	[ ]	[ ]	....
	d.	The visual indication(s) for electrical monitoring switch(es) for stop valve, pump status indications and/or other system status indication(s), where applicable, are properly given at the sprinkler system annunciator panel(s).	[ ]	[ ]	[ ]	....
	e.	The visual indication(s) for electrical monitoring switch(es) for stop valve, pump status indications and/or other system status indication(s) are properly transmitted to and displayed at other control/indicating panel(s), where applicable.	[ ]	[ ]	[ ]	....
	f.	Upon activation of an abnormal status from electrical monitoring switch(es) for stop valve, pump status indications and/or other system status indication(s), an audio alarm and a visual fault indication are properly given at the sprinkler system annunciator panel.	[ ]	[ ]	[ ]	....
	g.	Upon activation of an abnormal status from electrical monitoring switch(es) for stop valve, pump status indications and/or other system status indication(s), the fault signal is properly transmitted to and displayed at other control/indicating panel(s), where applicable.	[ ]	[ ]	[ ]	....
	h.	When audio fire alarm device(s) is/are required to sound, upon pressing the "alarm mute/silence" switch, where provided, at the sprinkler system annunciator panel, the operation of audio fire alarm device(s) connected to the system is suspended.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	i.	After the operation of the audio fire alarm device(s) is suspended by pressing the "alarm mute/silence" switch, where applicable, when a flow switch or another fire alarm initiation device from a new zone is activated, the fire alarm device(s) within the alarm zone(s) corresponding to the newly activated flow switch or the other newly activated fire alarm initiation device operate(s) properly.	[ ]	[ ]	[ ]	....
	j.	Upon activation of a flow switch or another fire alarm initiation device, the visual fire alarm zone indication at the sprinkler system annunciator panel is properly displayed until the activated flow switch or the other newly activated fire alarm initiation device is reset and the "Reset" button at the sprinkler system annunciator panel is pressed.	[ ]	[ ]	[ ]	....
	k.	Upon activation of the "Evacuate" button, where provided, at the sprinkler system annunciator panel, all fire alarm devices connected to the system are actuated.	[ ]	[ ]	[ ]	....
	l.	For systems equipped with a DTL connection, upon activation of a flow switch or another fire alarm initiation device, the "Fire Alarm" red indicator at the DTL fire signal box is lit and the fire alarm signal is verified to be properly transmitted to the Service Provider.	[ ]	[ ]	[ ]	....
	m.	For systems equipped with a DTL connection, upon activation of a common fault alarm signal, where provided, the fault signal is verified to be properly transmitted to the Service Provider.	[ ]	[ ]	[ ]	....
A13.5	Circuit Integrity Test (applicable to systems equipped with propriety-made sprinkler system annunciator panels)				[ ]	If N/A, skip A13.5
	a.	For panels equipped with short circuit monitoring, upon simulating a short circuit in the zone/loop circuit(s), audio and visual fault warning signals are properly given at the sprinkler system annunciator panel.	[ ]	[ ]	[ ]	....
	b.	Upon simulating an open circuit in the zone/loop circuit(s), audio and visual fault warning signals are properly given at the sprinkler system annunciator panel.	[ ]	[ ]	[ ]	....
	c.	Upon simulating a short circuit in the fire alarm device circuit(s), audio and visual fault warning signals are properly given at the sprinkler system annunciator panel.	[ ]	[ ]	[ ]	....
	d.	Upon simulating an open circuit in the fire alarm device circuit(s), audio and visual fault warning signals are properly given at the sprinkler system annunciator panel.	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	e.	For systems required to comply with BS 5839-1:2002+A2:2008 or BS 5839-1:2017 and relevant circular letters, upon activation of a flow switch or another fire alarm initiation device, the audio fire alarm device located in the vicinity of the sprinkler system annunciator panel or at the external wall, as applicable, is in full working order even if there is a short circuit fault affecting the operation of other audio fire alarm device(s).	[ ]	[ ]	[ ]	.....
	f.	For system required to comply with BS 5839-1:2002+A2:2008 or BS 5839-1:2017 and relevant circular letters, upon activation of a flow switch or another fire alarm initiation device, the audio fire alarm device located in the vicinity of the sprinkler system annunciator panel or at the external wall, as applicable, is in full working order even if there is an open circuit fault affecting the operation of other audio fire alarm device(s).	[ ]	[ ]	[ ]	.....
	g.	For systems required to comply with BS 5839-1:2002+A2:2008 or BS 5839-1:2017 and relevant circular letters, upon simulating a short circuit fault in the power supply circuit(s), where provided, for connecting fire alarm device(s), audio and visual fault warning signals are properly given at the sprinkler system annunciator panel.	[ ]	[ ]	[ ]	.....
	h.	For systems required to comply with BS 5839-1:2002+A2:2008 or BS 5839-1:2017 and relevant circular letters, upon simulating an open circuit fault in the power supply circuit(s) where provided, for connecting fire alarm device(s), audio and visual fault warning signals are properly given at the sprinkler system annunciator panel.	[ ]	[ ]	[ ]	.....
	i.	For systems required to comply with BS 5839-1:2002+A2:2008 and relevant circular letters, upon simulating a short circuit in the zone/loop circuit(s), the loss of protection is limited to not more than one floor plus a maximum of five devices (fire alarm initiation device(s) and/or fire alarm device(s)) on the floor immediately above and five devices on the floor immediately below that floor.	[ ]	[ ]	[ ]	.....
	j.	For systems required to comply with BS 5839-1:2017 and relevant circular letters, upon simulating a short circuit in the zone/loop circuit(s), the loss of protection is limited to not more than one floor.	[ ]	[ ]	[ ]	.....
	k.	Upon simulating a short circuit fault in the communication circuit(s) for connecting repeater panel(s) and/or other control/indicating panel(s), where applicable, audio and visual fault warning signals are properly given at the sprinkler system annunciator panel.	[ ]	[ ]	[ ]	.....
A13.6	When a set of external charger and battery is provided, additional items of inspection are required. The annual inspection for the additional items is recorded in Appendix XV.				[ ]	.....

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Appendix XIV

Automatic Actuating Devices for Pre-action Valve, Deluge Valve, Recycling Valve and/or MJC

Remarks: a. Appendix XIV is only applicable to sprinkler systems equipped with automatic actuating devices for initiating the operation of the pre-action valve, deluge valve, recycling valve and/or MJC. If not applicable, skip this Appendix.

b. Pilot sprinklers extended from the sprinkler control valve are considered as part of the sprinkler control valve but not automatic actuating devices.

A14.	**Automatic Actuating Devices for Pre-action Valve, Deluge Valve, Recycling Valve and/or MJC**					
A14.1	Fire Detector Installation (the following items are ascertained as far as reasonably practicable)		**Yes**	**No**	**N/A**	**Remarks**
	a.	The detector(s) including the detector base and masking plate, where applicable, is/are intact, properly mounted, and free from undue deterioration.	[ ]	[ ]	[ ]	....
	b.	The detector(s) is/are of the correct type for their application conditions.	[ ]	[ ]	[ ]	....
	c.	The detector(s) is/are free from painting, coating or any foreign covering materials which may affect the performance of the detector(s).	[ ]	[ ]	[ ]	....
	d.	The detector(s) is/are installed at the proper orientation in accordance with the requirements.	[ ]	[ ]	[ ]	....
	e.	The coverage area, spacing and clearance around the detector(s) conform with the requirements, having taken into consideration the installation conditions, building elements, other installations and various obstructions.	[ ]	[ ]	[ ]	....
	f.	The remote indicators, where provided, are intact, properly mounted, and free from undue deterioration.	[ ]	[ ]	[ ]	....
	g.	The detector(s) other than flame detector(s) is/are installed at the correct level(s) in relation to the apex, slab soffit, false ceiling soffit, raised floor soffit, obstruction soffit or skylight soffit, as applicable, in accordance with the requirements.	[ ]	[ ]	[ ]	....
	h.	The detector(s) other than flame detector(s) is/are surface mounted/semi-recessed mounted with the fire sensing element(s)/path(s) proud of the mounting surface and free from obstruction.	[ ]	[ ]	[ ]	....
	i.	The flame detector, where provided,(s) is/are installed at the proper orientation and has/have a clear line-of-sight to the area being protected.	[ ]	[ ]	[ ]	....
	j.	The lens(es) of the flame detector(s), where provided, is/are inspected to be free from dust, dirt, oil, foreign covering material and any contaminant which may affect the performance of the detector(s), and is/are cleaned where necessary.	[ ]	[ ]	[ ]	....
A14.2	Audio Fire Alarm Device Installation					
	The audio fire alarm device(s) connected to the system is/are intact, securely mounted, properly labelled and free from undue corrosion.		[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
A14.3	Safety Barrier Installation				[ ]	If N/A, go to A14.4
	The safety barrier(s) including the housing, where provided, is/are intact, properly mounted, properly wired, properly earthed and free from undue deterioration.		[ ]	[ ]	[ ]	....
A14.4	Sprinkler Control Panel					
	a.	The sprinkler control panel(s) is/are intact, securely mounted, properly labelled and free from undue corrosion.	[ ]	[ ]	[ ]	....
	b.	The control buttons, switches and indicators are properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
	c.	The control buttons and switches are tested to operate properly and are in the correct positions.	[ ]	[ ]	[ ]	....
	d.	The indicator(s), where provided, is/are tested to operate properly and is/are in proper status.	[ ]	[ ]	[ ]	....
	e.	The built-in alarm buzzer, where provided, is tested to operate properly.	[ ]	[ ]	[ ]	....
	f.	The fire alarm devices zoning arrangement, where applicable, conforms with the requirements.	[ ]	[ ]	[ ]	....
	g.	The fuse(s) in the power supply circuit and control circuit, as applicable, is/are of the correct ratings and intact.	[ ]	[ ]	[ ]	....
	h.	The circuit board(s), relay(s), timer(s), interface module(s), switch(es), circuit breaker(s), indicator(s), terminal block(s) and other components, where applicable, and the wirings inside the sprinkler control panel(s) are intact, properly wired and free from any sign of damage/overheating and undue deterioration.	[ ]	[ ]	[ ]	....
	i.	For systems equipped with a direct telephone link (DTL) connection, the "Power On" lamp indicator and the "Normal" lamp indicator at the DTL fire signal box are lit and free from any "Fire Alarm" indication.	[ ]	[ ]	[ ]	....
	j.	The battery(ies), where provided, is/are intact, within its/their nominal design life and free from swelling, electrolyte creepage, cracking, scorch mark, denting, leakage, unusually high temperature, undue corrosion and loose connections.	[ ]	[ ]	[ ]	....
	k.	The battery(ies), where provided, is/are marked with the date (month/year) of installation, and battery(ies) which has/have exceeded its/their nominal design life (deemed as 4 years if unknown) is/are replaced with secondary battery(ies) having a nominal design life of not less than 4 years.	[ ]	[ ]	[ ]	....

			Yes	No	N/A	Remarks
	l.	The cables and cable containment are intact, securely mounted, properly wired, and free from undue deterioration.	[ ]	[ ]	[ ]	....
A14.5	Electrical Components, Cable and Cable Containment (the following items are ascertained as far as reasonably practicable)					
	a.	All power supply points, interfacing modules, isolating modules, marshalling/interfacing boxes and components, where applicable, are intact, securely mounted, properly labelled, and free from undue deterioration.	[ ]	[ ]	[ ]	....
	b.	For systems required to comply with BS 5839-1:1988 and relevant circular letters and other than when any exemption condition is valid, in applications in which prolonged operation (i.e. cables for connecting components like fire alarm devices, sprinkler annunciator panel(s), repeater panel(s), mimic panel(s) and/or power supply) is required where applicable, mineral-insulated copper-sheathed cables or cables complying with BS 6387 AWX/SWX or other fire resisting cables of the required fire resisting rating are used.	[ ]	[ ]	[ ]	....
	c.	For systems required to comply with BS 5839-1:2002+A2:2008 or BS 5839-1:2017 and relevant circular letters, other than when any exemption condition is valid, the cables including the supports used for: (i) the critical signal paths (signal paths between fire alarm initiation points and fire alarm devices), (ii) the extra low voltage supply from an external power supply unit, (iii) the final circuit providing low voltage mains supply to the system, and (iv) the power supply to fire alarm devices, where applicable, are fire resisting cables of the required fire resisting rating.	[ ]	[ ]	[ ]	....
	d.	Cables other than mineral-insulated copper-sheathed cables and steel-wire-armoured cables are appropriately protected against mechanical damage and rodent attack.	[ ]	[ ]	[ ]	....
	e.	All devices, components and wirings installed within or passing through areas classified as a potentially hazardous area, where applicable, are explosion-protected types suitable for the particular area classification, and of the appropriate apparatus group and temperature class.	[ ]	[ ]	[ ]	....
	f.	The cables and cable containment are intact, securely mounted, properly wired, and free from undue deterioration.	[ ]	[ ]	[ ]	....
A14.6	Fire Detector Operation Notes: When the testing involves the sounding of audio fire alarm device(s), each count of sounding should normally last for not more than 5 seconds. Before the next count of the test, cease for not less than 5 seconds. In case of having a real fire during the testing, the sounding of audio fire alarm device(s) should normally be continuous and not be interrupted (other than when the system is interlocked with an audio/visual advisory system). In this way, the occupiers would be able to distinguish between real fire alarms and system testing.					

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			Yes	No	N/A	Remarks
	a.	The heat detector(s), where provided, other than non-restorable one(s) or that/those within a potentially explosive atmosphere, is/are tested to be operating properly using a suitable heat source, without affecting the subsequent performance of the detector(s).	[ ]	[ ]	[ ]	....
	b.	For non-restorable heat detector(s) where provided, the resistance of the zone/loop circuit(s) connecting the detector(s) is tested to be within the acceptable range.	[ ]	[ ]	[ ]	....
	c.	For point type heat/smoke/multi-sensor detector(s) within a potentially explosive atmosphere, where applicable, the resistance of the zone/loop circuit(s) connecting the detector(s) including any safety barrier(s), where applicable, is tested to be within the acceptable range.	[ ]	[ ]	[ ]	....
	d.	Point-type smoke detector(s), where provided, is/are tested to be operating properly by spraying suitable aerosols as recommended by the manufacturer or using another appropriate apparatus that generates simulated smoke, without affecting the subsequent performance of the detector(s).	[ ]	[ ]	[ ]	....
	e.	Optical beam smoke detector(s), where provided, is/are tested by introducing signal attenuation between the transmitter and receiver with an optical filter (for optical beam detectors using a combined transmitter/receiver unit in conjunction with a reflector, the optical filter is placed near the reflector), smoke or simulated smoke, without affecting the subsequent performance of the detector(s).	[ ]	[ ]	[ ]	....
	f.	Flame detector(s), where provided, is/are tested to be operating properly by a test torch that produces radiation frequency and wavelength compatible with the response range of the flame detector(s).	[ ]	[ ]	[ ]	....
	g.	The smoke sensor(s) of the multi-sensor detector(s), where provided, is/are tested to be operating properly by spraying suitable aerosols as recommended by the manufacturer or using another appropriate apparatus that generates simulated smoke, without affecting the subsequent performance of the detector(s).	[ ]	[ ]	[ ]	....
	h.	The heat sensor(s) of the multi-sensor detector(s), where provided, is/are tested to be operating properly using a suitable heat source, without affecting the subsequent performance of the detector(s).	[ ]	[ ]	[ ]	....

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			Yes	No	N/A	Remarks
	i.	The CO sensor(s) of the multi-sensor detector(s), where provided, is/are tested to be operating properly by spraying suitable CO test gas or using another appropriate apparatus that generates CO or a gas that has a similar effect on the electro-chemical cell as recommended by the manufacturer. (Remarks: CO is a highly toxic gas and suitable precautions should be taken in its use.)	[ ]	[ ]	[ ]	.....
	j.	The flame sensor(s) of the multi-sensor detector(s), where provided, is/are tested to be operating properly by a test torch that produces radiation frequency and wavelength compatible with the response range of the flame sensor(s), without affecting the subsequent performance of the detector(s).	[ ]	[ ]	[ ]	.....
A14.7	Sprinkler Control Panel Operation Notes: When the testing involves the sounding of audio fire alarm device(s), each count of sounding should normally last for not more than 5 seconds. Before the next count of the test, cease for not less than 5 seconds.					
	a.	Upon activation of a pre-alarm signal from a fire detector, where applicable, an audio alarm and a visual pre-alarm zone indications are properly given at the sprinkler control panel.	[ ]	[ ]	[ ]	.....
	b.	Upon activation of a pre-alarm signal from a fire detector, where applicable, a pre-alarm signal is properly transmitted for interface with other equipment/installation(s) and/or control/indicating panel(s), where applicable.	[ ]	[ ]	[ ]	.....
	c.	Upon activation of a fire alarm signal from a fire detector, an audio alarm and a visual fire alarm zone indications are properly given at the sprinkler control panel.	[ ]	[ ]	[ ]	.....
	d.	Upon activation of a fire alarm signal from a fire detector, the fire alarm device(s), where connected to the installation operate(s) continuously.	[ ]	[ ]	[ ]	.....
	e.	Upon activation of a fire alarm signal from a fire detector, a fire alarm signal is properly transmitted for interface with other equipment/installation(s) and/or control/indicating panel(s), where applicable.	[ ]	[ ]	[ ]	.....
	f.	Fire detector actuated non-interlocked pre-action, single-interlocked pre-action and/or recycling valve(s), where provided, is/are tested to trip properly upon activation of a pre-alarm/fire alarm signal from the fire detector.	[ ]	[ ]	[ ]	.....
	g.	Fire detector actuated double-interlocked pre-action valve(s), where provided, is/are tested to operate properly (i.e. solenoid valve(s)/actuator(s) opened but without tripping the valve(s)) upon activation of a pre-alarm alarm signal from the fire detector.)	[ ]	[ ]	[ ]	.....

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			Yes	No	N/A	Remarks
	h.	Fire detector actuated deluge valve(s), where provided, is/are tested to trip properly upon activation of a fire alarm signal from the fire detector.	[ ]	[ ]	[ ]	....
	i.	For fire detector actuated multiple jet control(s) (MJC), where provided, the wiring connection between the sprinkler control panel and the MJC(s) is tested to be in proper working order.	[ ]	[ ]	[ ]	....
	j.	When audio fire alarm device(s) is/are required to sound, upon pressing the "alarm mute/silence" switch where provided at the sprinkler control panel, the operation of audio fire alarm device(s) connected to the installation is suspended.	[ ]	[ ]	[ ]	....
	k.	After the operation of the audio fire alarm device(s) is/are suspended by pressing the "alarm mute/silence" switch, when a fire detector from a new zone is activated, the fire alarm device(s) within the alarm zone(s) corresponding to the newly activated fire detector, where applicable, operate(s) properly.	[ ]	[ ]	[ ]	....
	l.	Upon activation of a fire detector, the visual pre-alarm/fire alarm zone indication at the sprinkler control panel is lit until the activated fire detector is reset and the "Reset" button at the sprinkler control panel is pressed.	[ ]	[ ]	[ ]	....
	m.	For systems equipped with a DTL connection, upon activation of a fire alarm signal from the fire detector, the "Fire Alarm" indicator at the DTL fire signal box is lit and the fire alarm signal is verified to be properly transmitted to the Service Provider.	[ ]	[ ]	[ ]	....
	n.	For systems equipped with a DTL connection, upon activation of a common fault warning signal, where provided, the fault signal is verified to be properly transmitted to the Service Provider.	[ ]	[ ]	[ ]	....
A14.8	**Circuit Integrity Test**					
	a.	Upon simulating a short circuit in the zone/loop circuit(s), audio and visual fault warning signals are properly given at the sprinkler control panel.	[ ]	[ ]	[ ]	....
	b.	Upon simulating an open circuit in the zone/loop circuit(s), audio and visual fault warning signals are properly given at the sprinkler control panel.	[ ]	[ ]	[ ]	....
	c.	Upon simulating a short circuit in the fire alarm device circuit(s), audio and visual fault warning signals are properly given at the sprinkler control panel.	[ ]	[ ]	[ ]	....
	d.	Upon simulating an open circuit in the fire alarm device circuit(s), audio and visual fault warning signals are properly given at the sprinkler control panel.	[ ]	[ ]	[ ]	....

Annual Inspection Checklist for Sprinkler Systems

			Yes	No	N/A	Remarks
	e.	For systems required to comply with BS 5839-1:2002+A2:2008 or BS 5839-1:2017 and relevant circular letters, upon activation of a fire detector, the audio fire alarm device located in the vicinity of the sprinkler control panel or at the external wall, as applicable, is in full working order even if there is a short circuit fault affecting the operation of other audio fire alarm device(s).	[ ]	[ ]	[ ]	....
	f.	For systems required to comply with BS 5839-1:2002+A2:2008 or BS 5839-1:2017 and relevant circular letters, upon activation of a fire detector, the audio fire alarm device located in the vicinity of the sprinkler control panel or at the external wall, as applicable, is in full working order even if there is an open circuit fault affecting the operation of other audio fire alarm device(s).	[ ]	[ ]	[ ]	....
	g.	For systems required to comply with BS 5839-1:2002+A2:2008 or BS 5839-1:2017 and relevant circular letters, upon simulating a short circuit fault in the power supply circuit(s), where provided for connecting fire alarm device(s), audio and visual fault warning signals are properly given at the sprinkler control panel.	[ ]	[ ]	[ ]	....
	h.	For systems required to comply with BS 5839-1:2002+A2:2008 or BS 5839-1:2017 and relevant circular letters, upon simulating an open circuit fault in the power supply circuit(s), where provided for connecting fire alarm device(s), audio and visual fault warning signals are properly given at the sprinkler control panel.	[ ]	[ ]	[ ]	....
	i.	For systems required to comply with BS 5839-1:2002+A2:2008 and relevant circular letters, upon simulating a short circuit in the zone/loop circuit(s), the loss of protection is limited to not more than one floor plus a maximum of five devices (fire alarm initiation device(s) and/or fire alarm device(s)) on the floor immediately above and five devices on the floor immediately below that floor.	[ ]	[ ]	[ ]	....
	j.	For systems required to comply with BS 5839-1:2017 and relevant circular letters, upon simulating a short circuit in the zone/loop circuit(s), the loss of protection is limited to not more than one floor.	[ ]	[ ]	[ ]	....
	k.	Upon simulating a short circuit fault in the communication circuit(s) for connecting repeater panel(s) and/or other control/indicating panel(s), audio and visual fault warning signals are properly given at the sprinkler control panel.	[ ]	[ ]	[ ]	....
A14.9	When a set(s) of external charger and battery is/are provided, additional items of inspection are required. The annual inspection for the additional items is recorded in Appendix XV.				[ ]	....

Appendix XV

External Charger and Battery

Remarks: Appendix XV is only applicable to sprinkler system equipped with a set(s) of external charger and battery. If not applicable, skip this Appendix.

A15.	External Charger and Battery		Yes	No	N/A	Remarks
	a.	The charger(s) is/are intact, securely mounted, properly labelled and free from undue corrosion.	[ ]	[ ]	[ ]	....
	b.	All control button(s), switch(es), indicator(s) and meter(s), where provided are properly labelled in terms of usage.	[ ]	[ ]	[ ]	....
	c.	The reading(s) on the voltmeter(s)/ammeter(s), where provided, is/are within the acceptable range.	[ ]	[ ]	[ ]	....
	d.	The indicator(s), where provided, is/are in proper status.	[ ]	[ ]	[ ]	....
	e.	The fuse(s) in the charger(s) is/are of the correct rating and intact.	[ ]	[ ]	[ ]	....
	f.	The circuit board(s), relay(s), timer(s), interface module(s), switch(es), circuit breaker(s), indicator(s), terminal block(s) and other components, where applicable, and the wirings inside the charger(s) are intact, properly wired and free from any sign of damage/overheating and undue deterioration.	[ ]	[ ]	[ ]	....
	g.	The charger(s) operate(s) properly and is/are free from unusual loud noise, abnormally high temperature and evidence of damage.	[ ]	[ ]	[ ]	....
	h.	The battery(ies) is/are intact, within its/their nominal design life and free from swelling, electrolyte creepage, cracking, scorch mark, denting, leakage, unusually high temperature, undue corrosion and loose connections.	[ ]	[ ]	[ ]	....
	i.	The battery(ies) is/are properly labelled in terms of usage and marked with the date (month/year) of installation, and battery(ies) which has/have exceeded its/their nominal design life (deemed as 4 years if unknown) is/are replaced with secondary battery(ies) having a nominal design life of not less than 4 years.	[ ]	[ ]	[ ]	....
	j.	For unsealed type battery(ies), where applicable, the battery terminals are covered with a protective gel.	[ ]	[ ]	[ ]	....
	k.	For unsealed type battery(ies), where applicable, the electrolyte levels are correct with battery plates submerged, and low electrolyte level cell(s), if any, is/are topped up with distilled or de-ionized water to the correct level.	[ ]	[ ]	[ ]	....
	l.	For unsealed type battery(ies), where applicable, the densities of the electrolyte are tested by a hydrometer to be correct, and battery(ies) with low density electrolyte, where applicable, is/are replaced.	[ ]	[ ]	[ ]	....

			Yes	No	N/A	Remarks
	m.	The steady state float charge voltage(s) to the battery(ies) is/are measured (with the charger supply and the quiescent load remain connected but without fire alarm signal) to be within the range as recommended by the battery manufacturer, and the charger(s) having voltage outside the range, if any, is/are repaired/replaced.	[ ]	[ ]	[ ]	....
	n.	Having the battery supply to the system disconnected and with the maximum alarm load triggered, the output voltage(s) of the charger(s) is/are not less than 95% of the nominal voltage, and charger(s) with a lower voltage level, if any, is/are rectified/replaced. (Dummy load test may be carried out in lieu of actual full alarm load test.)	[ ]	[ ]	[ ]	....
	o.	Having the charger supply disconnected and with the maximum alarm load triggered, the battery(ies) is/are momentarily load tested. The output voltage from the battery(ies) after the initial volt-dip becomes steady and battery(ies) having continuous fast voltage dip to below the level as recommended by the battery manufacturer, if any, is/are replaced. (Dummy load test may be carried out in lieu of actual full alarm load test.)	[ ]	[ ]	[ ]	....
	p.	Upon simulation of a mains power supply failure to the charger(s), the audio and/or visual fault warning device(s), where provided, at the charger(s), is/are actuated.	[ ]	[ ]	[ ]	....
	q.	The charger status indicator(s), where provided, on the charger(s) and/or the annunciator/control panel as appropriate is/are tested to be in working order by simulating the respective scenarios.	[ ]	[ ]	[ ]	....
	r.	Upon simulation of a battery low voltage condition, the audio and/or visual fault warning device(s), where provided, at the charger(s), is/are actuated.	[ ]	[ ]	[ ]	....
	s.	The battery status indicator(s), where provided, on the charger(s) and/or the annunciator/control panel as appropriate is/are tested to be in working order by simulating the respective scenarios.	[ ]	[ ]	[ ]	....
	t.	The cables and cable containment are intact, securely mounted, properly wired, and free from undue deterioration.	[ ]	[ ]	[ ]	....