FWSR
FIREWATCH SAFETY RESULTS
GROUP

5 YEARLY HYDRANT SERVICE & TESTING

What you need to know

www.fwsrgroup.com.au

FIREWATCH SAFETY RESULTS GROUP

Contents

OUR FIRE SERVICES

FWSR Group's expert technicians operate in accordance with Australian Fire Regulations, providing a full range of services from installation, commissioning, testing and certifying to repairs and maintenance.

FWSR Group can install, commission, test and certify:

- Portable fire equipment
- Fire hose reels
- Fire alarms
- Sprinklers and fire pumps
- Hydrants
- EWIS/OWS/FIP
- Emergency and exit lights
- Breathing apparatus
- Gas detection

We can also provide maintenance and training for:

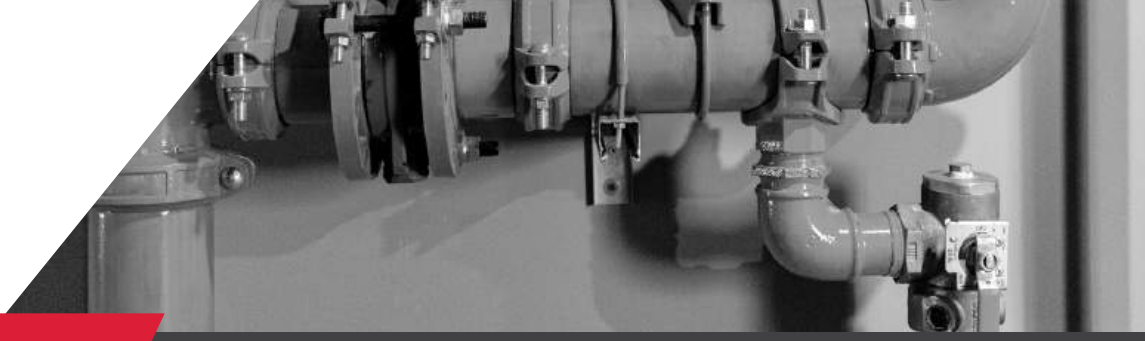
- Fire extinguishers
- Fire hose reels
- Fire blankets
- Emergency and exit lights
- Fire alarms
- EWIS/OWS
- Sprinkler systems
- Fire, smoke and exit doors
- Fire hydrants
- Passive fire elements

SUPPORT & SERVICE

Under AS1851 (Australian Standard), building owners are required to meet safety standards for fire protection systems. This set of rules and regulations ensures building owners are compliant with occupational health and safety requirements and any applicable laws.

But most importantly, these regulations provide safeguards that fire protection systems are routinely tested and maintained to operate at their full capacity in the event of an emergency.

FWSR Group is your 'one-stop-shop' when it comes to fire protection and improving the safety processes in your workplace. We are able to assist you with fire protection compliance, while you will have full access to digital records via our online portal, offering you complete transparency.



AUSTRALIAN FIRE STANDARDS

The AS1851 Fire Service Standard – Routine Service of Fire Protection and Equipment – includes a series of inspections, tests and maintenance activities to be performed on fire protection systems at set intervals. This includes:

- Monthly
- Quarterly
- 6-monthly
- Yearly
- 5-yearly
- 10-yearly
- 25-yearly and;
- 30-yearly service.

Fire protection systems refer to fire detection and suppression systems including:

- Automatic fire sprinkler systems
- Fire pump sets
- Fire hydrant systems
- Hydrant valves
- Water storage tanks for fire protection systems.
- Fire detection and alarm systems
- Special hazard systems
- Fire hoses, extinguishers and blankets
- Passive fire and smoke systems
- Fire and smoke control features and mechanical services
- Emergency planning in facilities.

The standards set out what tests, inspections and maintenance needs to occur at each set interval.

At FWSR Group, we are committed to providing excellent customer service by partnering with our clients to provide ongoing support for all of your fire services' needs.

We keep all of your equipment and asset information on a database for future scheduling requirements and will get in touch with you prior to your scheduled maintenance being due to arrange a suitable time for your next

COMMISSIONING, BASELINE DATA & CONDITION REPORTS

Baseline data is necessary to establish the performance benchmark of the fire protection system or equipment. If baseline data is not available, the system will be reported as a non-conformance *(see section after your routine service on page 10).*

Baseline data may include, for example, water supply details, pump test flow and pressure data, pressure settings, block plan information, systems interface cause and effect, control and indicating equipment configuration.

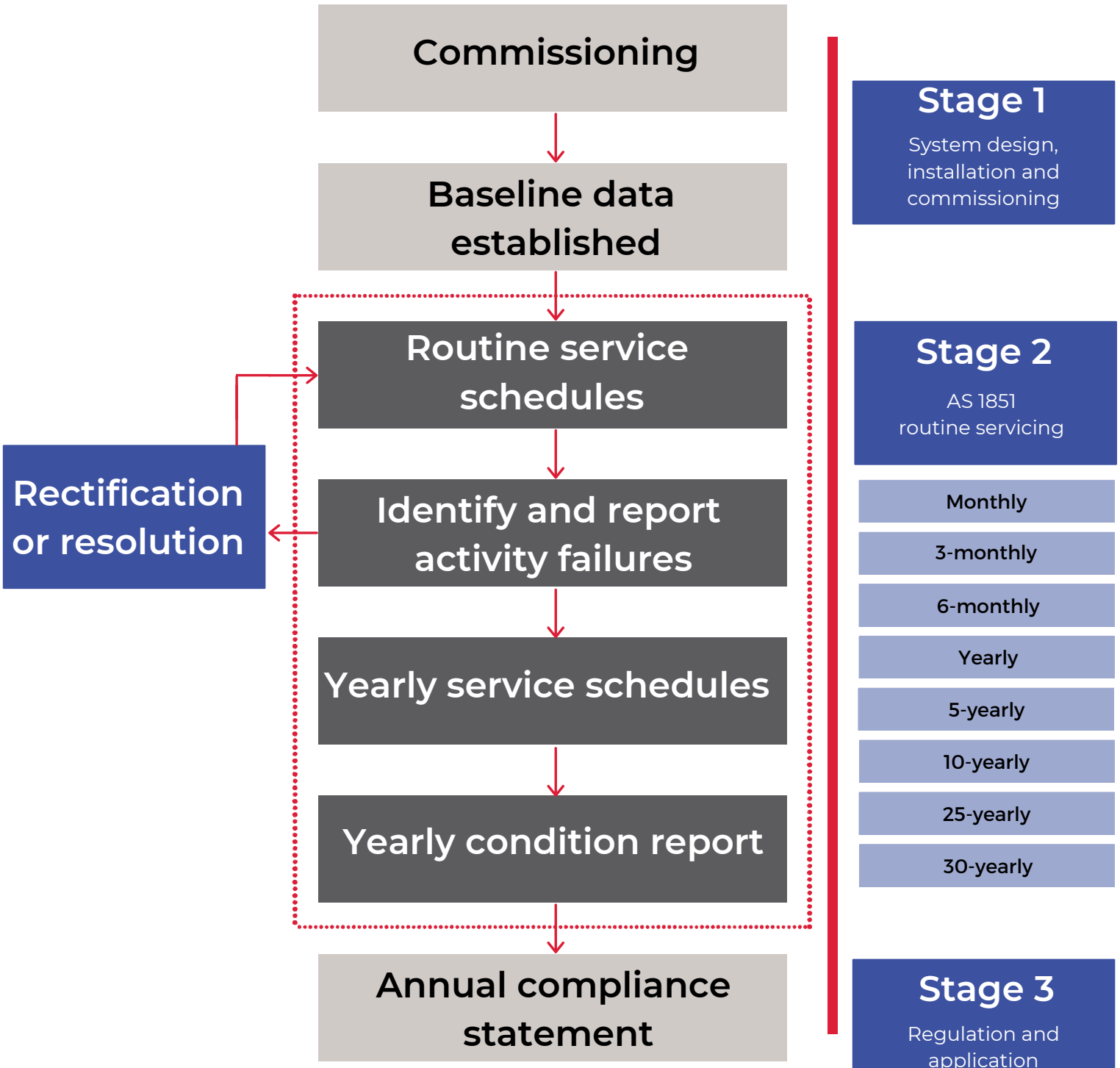
It will be used when commissioning a new fire protection system, or at the commencement of new maintenance arrangements.

This will be used to establish routine service schedules and to identify and report activity failures and where any issues need to be rectified or resolved.

This process will also set up a schedule for yearly servicing and condition reports, which provide you with an annual compliance statement for insurance and occupancy requirements.

The chart on the following page explains the process for commissioning a new fire protection system or setting up new maintenance arrangements and servicing schedules.

COMMISSIONING, BASELINE DATA & CONDITION REPORTS



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ROUTINE SERVICE FREQUENCY

AS 1851	Monthly	3 monthly	6 monthly	Yearly	5 yearly	10 yearly	25 yearly	30 yearly
Automatic fire sprinkler systems	✓		✓	✓	✓	✓	✓	✓
Fire pump sets	✓		✓	✓	✓	✓		
Fire hydrant systems	✓		✓	✓	✓			
Hydrant valves			✓	✓	✓			
Water storage tanks for fire protection systems	✓		✓	✓		✓		
Fire detection and alarm systems	✓		✓	✓	✓			
Special hazard systems	✓		✓	✓		✓		
Delivery lay flat fire hose				✓				
Fire hose reels			✓	✓				
Portable and wheeled fire extinguishers			✓	✓				
Fire blankets			✓					
Passive fire and smoke systems		✓	✓	✓				
Fire and smoke control features of mechanical services	✓	✓	✓	✓	✓			
Emergency planning in facilities	✓		✓	✓				

5-YEARLY ROUTINE SERVICE

What is the purpose of the 5-yearly routine service?

The 5-yearly routine service includes 10 items, primarily focused on the fire hydrant system and booster assembly that connects to town's water mains and is used by fire services during firefighting operations. See example of hydrant and booster system over page.

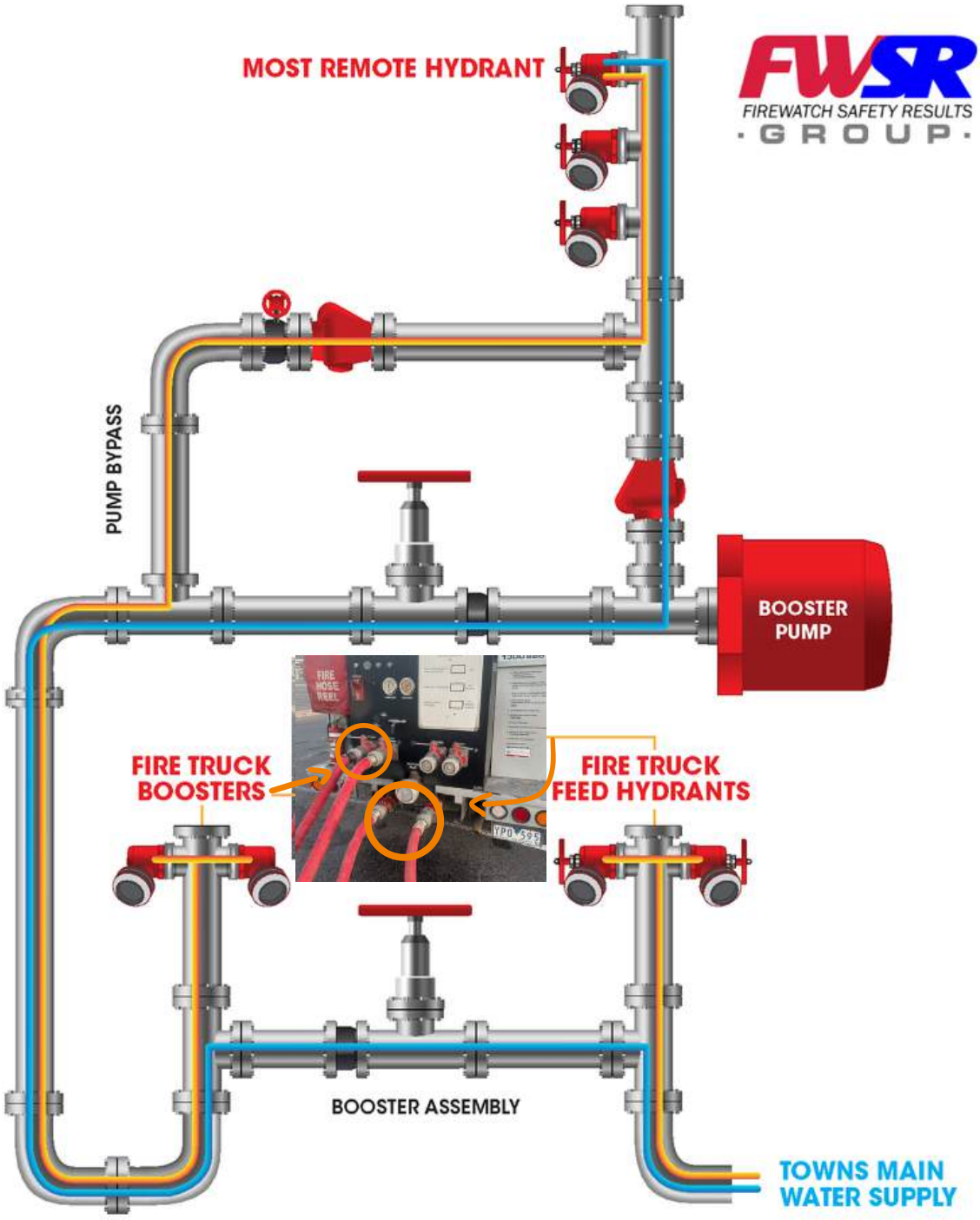
These service items include:

- Testing and verifying the operation and performance (against a calibrated source) of all of the fire hydrant system pressure gauges
- Completing a service on all valves within the fire hydrant system including the booster assembly prior to undertaking the hydrostatic pressure test. This requirement exists to help ensure there are no leaks within the fire hydrant system that could adversely affect the outcome of the hydrostatic pressure test
- Renewing each water supply non-return valve seat and gasket
- Conducting a flow test
- Conducting a hydrostatic pressure test.

Fire Hydrant System 5-yearly service

PM-PMP-5Y	Conduct pump 5-year service
Gauges	Check / test each pressure gauge
Booster assembly	Change washers, lubricate spring, check valves
Drain and test valve washers	Examine seat / new washers OR fit new gland packing
Stop valves	Fit new gland packing and lubricate spindle
Hydrant valves	Fit new valve seats and lubricate spindle
Water supply non-return valves	Renew water supply non-return valve seating and gasket

Conduct a hydrostatic pressure test & flow test



LEGEND

ISOLATION VALVE

ISOLATION VALVE

CHECK VALVE

HYDRANT VALVE

CHECK VALVE

BOOSTER INLET

5 YEARLY TEST

Providing performance of:

- Pump Bypass
- Boosters & Feed Hydrants

ANNUAL FLOW TEST

Providing performance of:

- On Site Pump
- Towns Main Supply
- Booster Bypass

5-YEARLY ROUTINE SERVICE

Flow test

The purpose of the 5-yearly routine service is to test the Fire Brigade Booster Assembly and associated on-site pump bypass and valving and piping that assists in firefighting operations.

Fire Brigade Boosters provide a point of attachment for the fire brigade to supply additional water and flow/pressure via the hydrant system. This is heavily relied upon during firefighting operations.

This service simulates firefighting operations to check there are no obstructions or impediments within the systems that would affect or restrict the water flow/pressure available to the hydrants.

This test is critical, because over time, pipework and valves can corrode and deteriorate internally and as a result, may seize or become blocked. This could result in the failure of the hydrant booster system.

NOTE: The 5-yearly flow test differs from annual water supply proving which is undertaken as part of yearly routine serving to verify each water supply, including town's main, fire pumps, tanks etc. The annual water supply test does not include flow testing of fire brigade boosters and pump bypasses (see figure below).

Hydrostatic pressure service & testing

The 5-yearly service includes the replacement of all valve seatings, gaskets and washers within the hydrant system.

The hydrostatic pressure test performed as part of the 5-yearly is designed to test the replaced parts and ensure the piping system can sustain the elevated water pressures required during firefighting operations.

Pictured left and middle: Pipe work that split during a booster test and was repaired on the same day. This would have failed during firefighting operations.

Pictured right: Deteriorated and blocked pipework. This was found during testing and reported and repaired soon after.

5-YEARLY REPORT EXAMPLE

5 YEARLY HYDRANT TEST REPORT

PROPERTY/LOCATION	DATE/TIME PERFORMED	TECHNICIAN/S	REPORT	NEXT TEST DUE:
	05/06/23 01:00 Pm	Colin Adam	Rhys	Jun 2028

WORKS PERFORMED – 5 YEARLY HYDRANT SCHEDULE

SECTION	REQUIREMENT	STATUS
Six monthly and yearly service	Complete all monthly, six monthly and yearly service activities.	COMPLETE
Booster connection flow test (where fitted)	Conduct a flow test through the booster connection in accordance with AS2419.1 or to approved design standard.	COMPLETE
Hydrostatic test	Where a booster is fitted conduct a hydrostatic test on the entire system at 1.5 times the system working pressure of the required design standard.	COMPLETE
Booster assembly	(a) Change all washers on booster assembly connection inlets	COMPLETE
	(b) Lubricate internal non-return spring check valves on a 10 yearly basis	N/A
Drain and test valve washers	For screw down style valves, examine seating and fit new washers. For packed gland variants, fit new gland packing	COMPLETE
Stop valves	Fit new gland packing and lubricate spindles	COMPLETE
Hydrant valves	Fit new seatings to all hydrant valves and lubricate spindles (perishable items only)	COMPLETE
Water supply non-return valves	Renew water supply non return valve seatings and gaskets	COMPLETE
Gauges	Check all pressure gauges against a calibrated gauge	COMPLETE
Water supply tanks – atmospheric	Perform routine service.	COMPLETE

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BOOSTER CONNECTION FLOW TEST

Test- flowing two Hydrant Outlet discharging 20 Lt/sec @ 700 kPa through 18.6mm nozzles. (Total= 20 Lt/sec)

Inlet Pressure:	Static tank supply
At booster inlet: (FWS Calibrated Gauge)	800 Kpa
Booster Site Gauge Incorporated in head:	770 Kpa
Achieved:	Achieved 20 Lt Sec @ 30 Kpa Loss
Test Outcome	**PASS**

ANNUAL FLOW TEST RESULT

Type:	Hydrant flow test
Number:	2
Installed Pump Demand:	10 L/Sec @ 900 Kpa
Installed Pump Duty:	10 L/Sec @ 700 Kpa

FIRE PUMP FLOW TEST

Results Using One Hydrant Branch on outlet of the hydrant, fitted with one sized nozzle, and with achieved results calculated per AS2419.1 Appendix C- C.4.3.5(a) Fire Nozzle Discharge Chart.

Static pressure prior to test commencing:	900
Attempted Flow Rate:	10 L/Sec @ 700 Kpa
Pump 1 Achieved:	10 L/Sec @ 750 Kpa
Pump 2 Achieved:	10 L/Sec @ 720 Kpa
Test Outcome	**PASS**

HYDROSTATIC TEST

System Type:	
Test Pressure as Specified:	1.5 X Design Pressure, 1200 Kpa
Test Duration as Specified	2 Hours
Test Outcome	**Pass**

Report By:
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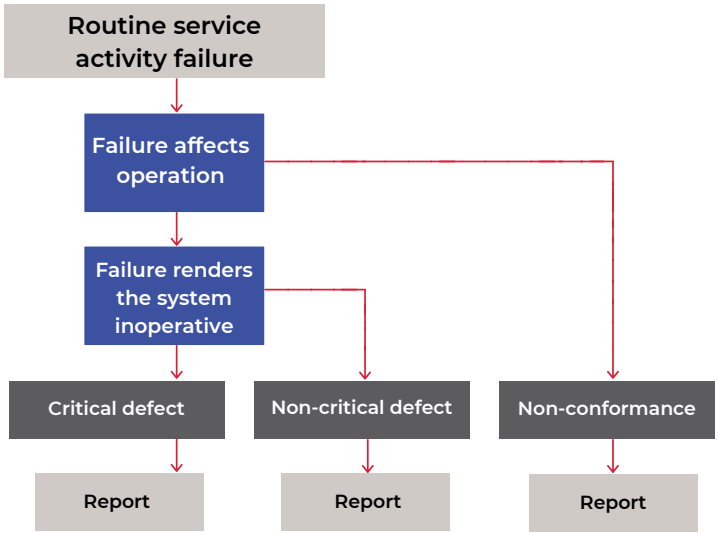
AFTER YOUR ROUTINE SERVICE

Our expertly-trained fire service technicians will complete a report based on your service and compliance with Australian Standards 1851.

This report will identify any critical defects or areas of non-coformance, as well as issues that may require further inspection or preventative maintenance. In many cases, no action will be required from your business or organisation and you will be scheduled for your next routine service at the set intervals.

If our report does identify areas of non-compliance, we are here to help you. We will provide you with the information and next steps you need to take to ensure compliance. In some cases, these actions will need to be undertaken in a set period and re-inspected.



Examples of what you might find on your report include:

Critical defect – This is a defect that renders a system inoperative.

Examples of critical defects include a failed check valve at the booster assembly, which would result in a fire appliance not being able to get the system to correct operating pressure to fight a fire in a real life event.

Other defects could include a system leak because of a failure of a coupling, valve, gland or breach, a catastrophic failure in the structural integrity of a pipe and seized or damaged isolation valves.

Non-conformance – A missing or incorrect feature that does not affect the system operation but is required to facilitate ongoing routine service.

Examples of non-conformance include missing or incorrect signage, missing fire hydrant block plans, an obstructed booster assembly or hydrant stands.

Non-critical defects – A system impairment or faulty component not likely to critically affect the operation of the system.

Examples of non-critical defects include, local alarm bell not operating, water motor alarm failure.

Preventive maintenance – This includes a series of actions, including lubrication, cleaning, adjustment and replacement of components at regular intervals. This minimizes the likelihood of breakdowns.

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