

Comparison of total flood Fire Suppression System Maintenance Costs FM-200 or Novec1230 – v - FirePro Aerosol Maintenance requirements are specified according to AS1851 – 2012

Ref		Gas	FirePro
Table 6.4.1.2 MONTHLY SERVICE			
1.2	Inspect - FIP, and CIE. Ensure are visible, accessible, and free of debris	REQUIRED	REQUIRED
1.4	SIMULATE an alarm and confirm all visual and audible devices operate.	REQUIRED	REQUIRED
1.8	INSPECT zone block plans to ensure they are mounted and legible.	REQUIRED	REQUIRED
1.9	CHECK that baseline data is available and legible	REQUIRED	REQUIRED
Table 7.4.2 MONTHLY SERVICE SCHEDULE - SPECIAL HAZARD SYSTEMS			
1.8	Check aerosol generators have not been discharged and are secure.	NOT REQUIRED	REQUIRED
1.9	Check generator dust covers are secure, and in good condition.	NOT REQUIRED	REQUIRED
Table 6.4.1.3 SIX-MONTHLY SERVICE			
2.2	Local control station - Ensure visible, accessible, & debris free.	REQUIRED	REQUIRED
2.3	INSPECT all visual warning devices for damage: • DO NOT ENTER • EVACUATE • FIRE ALARM • SYSTEM INOP.	REQUIRED	REQUIRED
2.8	TEST each actuator circuit to ensure a fault is registered at the FIP	REQUIRED	REQUIRED
2.9	TEST each actuator and ensure that each actuator operates correctly.	REQUIRED	REQUIRED
Table 7.4.3 SIX-MONTHLY SERVICE SCHEDULE			
2.5	CHECK all pneumatic piping and fittings.	REQUIRED	NOT REQUIRED
2.9	CHECK all nozzles are clear and unobstructed, correctly aimed & secured.	REQUIRED	NOT REQUIRED
2.11	Check pressure relief vents, pipework, nozzles, manifolds	REQUIRED	NOT REQUIRED
2.13	CONFIRM by weighing, or using liquid level, that each storage container is correctly charged.	REQUIRED	NOT REQUIRED
Table 7.4.4 YEARLY ROUTINE SERVICE SCHEDULE			
3.16	COMPLETE an integrity test for total flooding systems. CONFIRM that the results satisfy the requirements of the approved design.	REQUIRED	NOT REQUIRED
Table 7.4.5 TEN-YEARLY ROUTINE SERVICE SCHEDULE			
4.3	Hydrostatically pressure TEST cylinders & Valve overhaul. Replacement Cylinders required.	REQUIRED	NOT REQUIRED

Additional Maintenance costs for Gas System over 15 years. – Costs Based on Single Cylinder System

Check Pneumatic Pipes & Fittings Check Nozzles Check pressure relief vents Liquid Level Cylinder Test	6 Monthly	* \$700	\$21,000
Fan Integrity for Risk Area	Annual	* \$3,000	\$45,000
Hydrostatic Test for Cylinders	10 Yearly	* \$2,300	\$2,300

Estimated Additional Maintenance Costs over 15 Years

\$68,300

Note:	• Basis of Costs	Cost are estimates and are indicative only
	• Fan Integrity Testing	Costs are based on Metropolitan areas and exclude any rectification of the risk area if integrity test is failed.
	• Hydrostatic testing	Costs exclude any freight, or crane hire for cylinder handling at site



Notes including Occupational Health and Safety-

- Where internal equipment changes occur in protected space be required - Novec system will need a new redesign each time.
- FirePro will not require any changes to the original design calculation unless large opening are installed beyond the design loss calculated or the actual volume of the risk gets larger.
- The only way that the NOVEC system can overcome the fan integrity test hold time loss is by increasing the design density above its safe NOAEL & LOAEL. It is no longer safe for staff within the risk on discharge due to lack of oxygen.
- Novec 1230 is a FLUORINATED KETONE** Liquid which rapidly gasifies. Novec's Thermal decomposition producing HF and COF₂ – highly toxic
- The FirePro® aerosol-forming compound is not based on halogen (FM-200 or Novec 1230) compounds that react with the fire & create hydrofluoric acid In both liquid and gaseous form, hydrogen fluoride is extremely reactive, attacking metals, glass, leather and natural rubber.
- FirePro is approved for use under the EPA SNAP substitutes in manned risks with total flooding fire suppression agents.
- 1 Unit FirePro = 6 – 9 Units FK (required quantity).
- Should a system be no longer required the FirePro system /generators are completely transferable to a new risk once the design density per volume is calculated.
- Inert gas systems are designed to operate at high pressures – resulting in higher upfront costs for equipment and infrastructure, and higher maintenance costs for testing and replacing components over the life of the system.
- Environmental –**

		FirePro	Novec	FM-200
Ozone Depletion Potential	O.D.P.	Zero	Zero	Zero
Global Warming Potential	G.W.P.	Zero	1	3500
Atmospheric Lifetime Years	A.L.T.	Negligible	.014	33-36.5

Harmful to aquatic life with long lasting effects.

- FirePro can't lose pressure over time. It doesn't have cylinders or pipework to rust.
- FirePro has a Safety Integrity Level Rating. SIL is an indicator of the probability that the actuator will fail to perform properly. Result of test- SIL 2 with Hardware Fault Tolerance = 0 SIL 3 with Hardware Fault Tolerance = 1. This provides a Safety Failure Fraction of 90-99%.

