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Johnson Controls expands TYCO® LFP Antifreeze maximum system volume criteria

Johnson Controls is pleased to announce an enhanced listing for Tyco® LFP® Antifreeze – the industry's first UL Listed antifreeze. Introduced in 2018, LFP® Antifreeze became the industry standard for freeze protection in wet pipe sprinkler systems. This proven solution continues to meet industry demands with a newly listed system expansion up to 500 gallons for NFPA 13 light hazard occupancies.

Temperature Range	Application	Maximum Volume of Antifreeze in Sprinkler System
-10°F to 150°F (-23°C to 66°C)	NFPA 13D*	≤500 gal; in accordance with NFPA 13D design criteria
	NFPA 13R – Residential Only (including corridors, garages that serve only a single dwelling unit, and compartmented Ordinary Hazard areas ≤500 sq ft)* Note: Where NFPA 13R requires the use of NFPA 13 design criteria, refer to the NFPA 13 applications and volume limitations.	≤500 gal; in accordance with NFPA 13R design criteria Note: Where NFPA 13 design criteria is required in areas of an NFPA 13R Occupancy, such as an attic, use the applicable volume limitation for the hazard area for NFPA 13.
	NFPA 13 - Light Hazard*	≤200 gal; in accordance with NFPA 13 design criteria or >200 gal to ≤500 gal; in accordance with NFPA 13 using the dry system hydraulic design criteria, where the system hydraulics are designed as a dry system even though the system is filled with antifreeze
	NFPA 13 - Ordinary Hazard Groups 1 & 2*	40 gal; in accordance with NFPA 13 design criteria
	NFPA 13 – Storage*	40 gal; in accordance with NFPA 13 design criteria
NOTES *The antifreeze solution is intended to be installed in accordance with the manufacturer's instructions. The use of the antifreeze solution is limited to the above ground system piping only, except for a limited length of underground piping that connects sections of the above ground system. The viscosity of the antifreeze solution at use temperatures shall be considered in the hydraulic design for all systems using antifreeze. For systems greater than 40 gal (151 L), pipe sizing shall be determined using both the Darcy-Weisbach and Hazen-Williams approved hydraulic calculations. Because of the density of antifreeze, the K-factor shall be adjusted and the friction loss shall be considered in the system design.		
LFP® ANTIFREEZE LISTINGS LIMITATIONS		

Changes to Maximum System Volume Criteria:

- Tyco LFP Antifreeze is now UL Listed for a maximum volume of 500 gallons in NFPA 13 Light Hazard occupancies
- Tyco LFP Antifreeze is now UL Listed for a maximum system volume of 500 gallons in NFPA 13R and NFPA 13R with NFPA 13 mixed use occupancies
- For NFPA 13R and NFPA 13 Light Hazard occupancies where the system size is between 200 and 500 gallons; these systems must be designed using dry system hydraulic design criteria
- NFPA 13D occupancies are now limited to under 500 gallons maximum volume per system. This is a new limitation imposed by UL for all UL Listed antifreeze products
- TYCO LFP Antifreeze is UL Listed in conjunction with TYCO CC3 Interstitial Space Specific Application Sprinklers for unlimited volumes when protecting light hazard flat concealed spaces incorporating noncombustible or wood truss construction

Sincerely,
Bob Cordell

Bob Cordell
Global Product Manager, Commercial and Special Applications Sprinklers