



DFES Built Environment Branch - Technical Note 11/12

Revised: March 2015

Residual Pressure of Attack Fire Hydrants – Australian Standard 2419.1 2005

Objective

The objective of this Technical Note is to clarify the Department of Fire and Emergency Services (DFES) position in respect of the Australian Standard 2419.1 2005 Amendment 1 - “Fire Hydrant Installations: System design, installation and Commissioning” (AS2419.1), as it relates to minimum required residual pressure of attack hydrants.

Background

AS2419.1 is a nationally adopted standard through direct reference by the Building Code of Australia. AS2419.1 Table 2.2 includes an alternative residual pressure of 350 kPa at attack hydrants where this pressure can be achieved without the use of on-site building pumps, and without being boosted by a fire authority pumping appliance.

Issue

Currently the Fire & Rescue Service of WA (FRS) use Protek 366 and 367 fire fighting branches for offensive fire attack. These branches are designed for optimum operation at a residual pressure of 700 kPa (7Bar)

The residual pressure of 350 kPa prescribed in AS2419 Table 2.2 and as detailed in Protek instructional material, will not allow the Protek branch to operate at the optimum performance level required by the FRS. This has been confirmed through controlled testing (by FRS and a number of other Brigades) of the branch through a range of residual pressures. In particular a personal protective fog pattern fails to form correctly when applying 350 kPa to a length of 40mm lay-flat fire hose terminating with the Protek branches. The pressure losses incurred through the hose results in a pressure significantly lower than 350 kPa being received at the branch.

Conclusion

To ensure FRS personnel are afforded the required standard of on-site fire fighting equipment in buildings, and in line with AS2419.1 Section 2.1.1 Paragraph 1, which states, “*Fire hydrant systems designed in accordance with this standard shall be compatible with the equipment and procedures employed by the attending fire brigade*”, DFES are advising hydrant system designers to disregard the section of AS2419.1 Table 2.2 where it refers to an unassisted attack pressure of 350 kPa. The minimum residual pressure required at all attack hydrants is to be not less than 700 kPa.

There is also an obligation on the employer (DFES) to ensure the occupational health safety and welfare of employees is not compromised through less than optimal use of equipment at incidents. As such the current DFES Training Standards Manual April 2012 (recruit training standard) instructs fire-fighters to operate the Protek branches at an operating pressure of 700 kPa

There may be branches in FRS service that operate effectively at a residual pressure lower than 700 kPa, however the minimum residual pressure at hydrants must be suitable for use with all branches in service in the FRS.

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