



FRNSW compatible Storz hose connections

1 Purpose

This technical information sheet details Fire and Rescue NSW (FRNSW) requirements for compatible Storz hose connections on any new or upgraded hydraulic fire safety system.

2 Scope

This technical information sheet details:

- (a) the regulations and standards applicable to Storz hose connections
- (b) design and installation requirements for Storz hose connections to be compatible with FRNSW equipment
- (c) requirements for compliance certification through product conformity documentation.

3 Application

This document applies to Storz hose connections on any new or upgraded (i.e. modified) fire hydrant or fire sprinkler system installed in any building, facility or site within NSW.

FRNSW compatible hose connections are required on all fire brigade booster inlets, feed fire hydrant outlets, attack fire hydrant outlets and suction connections.

Hose connections are part of the fixed system under *Australian Standard AS 2419.1:2021*¹ and must be verified during compliance inspections and tested as part of commissioning.

This document is intended to be used by building owners, fire protection installers, accredited practitioners (fire safety), fire engineers, hydraulic consultants, certifiers and regulatory authorities.

4 Background

FRNSW historically used fire hoses with fire brigade thread (FBT) couplings, often referred to as NSW 'V' thread, a variation of the Whitworth form thread with a pitch of $5\frac{1}{5}$ threads per inch (TPI).

Note: The British Standard Whitworth thread has a pitch of 5 TPI and was used in Victoria, but this thread is not fully compatible with NSW FBT.

During the 1980s, FRNSW (then NSW Fire Brigades) transitioned to Storz hermaphrodite couplings, with this coupling being identified within AS 2419.1–1994. Later, AS 2419.1–2005 identified NEN 3374² Storz hermaphrodite hose connections being used in NSW.

In 2008, the FRNSW Commissioner determined that Storz hose connections were to be fitted to new or upgraded fire hydrant systems. FRNSW specified an 'FBT-Storz adapter' being fitted onto FBT inlets and outlets.

In 2021, Australian Standards published AS 2419.4:2021 with the intent to supersede other standards including secondary referenced standards. This was achieved when NCC 2022³ was adopted in NSW on 1 May 2023.

¹ AS 2419.1:2021 *Fire hydrant installations: System design, installation and commissioning*

² NEN 3374:1971 *Fire fighting equipment – Fire hose couplings and ancillary equipment*

³ *National Construction Code 2022 Volume One, Building Code of Australia Class 2 to Class 9 Buildings*

5 Regulations and Standards

5.1 Hydraulic fire safety systems

- 5.1.1 Deemed-to-Satisfy provision E1D2 of the NCC requires a fire hydrant system serving a building to be installed in accordance with AS 2419.1:2021⁴.
- 5.1.2 Clause 9.1 of AS 2419.1:2021 states any fitting on a new or modified fire hydrant system, which includes hose connections, must also be new.
- 5.1.3 Clause 9.3.1 (b) of AS 2419.1:2021 states that fire hydrant valves shall have outlet connections compatible for use with the local fire brigades' firefighting equipment.
- 5.1.4 Clause 9.4 (b) of AS 2419.1:2021 states that fire brigade booster connections shall have inlet connections compatible for use with the local fire brigades' firefighting equipment.
- 5.1.5 Appendix Q of AS 2419.1:2021 identifies Storz hermaphrodite hose couplings to AS 2419.4:2021 are used by fire brigades within NSW.

Note: All hose connections on any new or upgraded fire hydrant or fire sprinkler system must therefore be AS 2419.4:2021 compliant Storz hose connections.

5.2 Fire brigade booster

- 5.2.1 Clause 1.2 of AS 2419.3–2012⁵ specifies fire brigade booster inlet connections are to be fitted with hose connections that comply with local fire brigade requirements.
- 5.2.2 Appendix B of AS 2419.3–2012 identifies 'NEN 3374' Storz hermaphrodite hose couplings in NSW.

Note: The requirements of AS 2419.1, a primary referenced standard by the NCC, supersede AS 2419.3. AS 2419.4:2021 compliant Storz hose connections are required on any new or upgraded fire hydrant or fire sprinkler system.

- 5.2.3 All Storz hose connections fitted to fire brigade booster inlet connections are to be fitted with a delivery gasket for positive pressure operation.

Note: Refer to Section 3.5 of AS 2419.4 for delivery gasket requirements.

5.3 Fire hydrant valve

- 5.3.1 Clause 3.4 of AS 2419.2–2009⁶ states hose connections fitted to fire hydrant valves shall comply with local fire brigade specifications.
- 5.3.2 Appendix B2 of AS 2419.2–2009 identifies different types of fire hose couplings used in Australia, but not what type/s are used per jurisdiction.

Note: The requirements of AS 2419.1, a primary referenced standard by the NCC, supersede any hose connection requirements within AS 2419.3.

- 5.3.3 An FBT-Storz adapter complying with FRNSW specifications, as identified through previous versions of this document, are no longer permitted on any new or upgraded hydraulic fire safety system.

Note: The FBT-Storz adapter does not comply with AS 2419.1:2021.

- 5.3.4 All Storz hose connections fitted to fire hydrant valve outlets are to be fitted with a delivery gasket for positive pressure operation.

Note: Refer to Section 3.5 of AS 2419.4 for delivery gasket requirements.

⁴ AS 2419.4:2021 *Fire hydrant installations: Storz fittings for firefighting purposes*

⁵ AS 2419.3–2012 *Fire hydrant installations: Fire brigade booster connections*

⁶ AS 2419.2–2009 *Fire hydrant installations: Fire hydrant valves*

5.4 Fire brigade suction connections

- 5.4.1 Section 5.3.1 of AS 2419.1:2021 outlines requirements for fire brigade suction connections including for large-bore suction connections (150 mm) and small-bore suction connections (65 mm).

Note: Fire brigade suction connections are fitted to water storage tanks under section 5 of AS 2419.1:2021 (i.e. a ‘TANK CONNECTION’) and to fixed suction connections under section 4.4 of AS 2419.1:2021 (i.e. a ‘DRAUGHTING POINT’).

- 5.4.2 All Storz hose connections fitted to fire brigade suction connection outlets, whether large or small bore, are to be fitted with a suction gasket for negative pressure operation.

Note: Refer to Section 3.4 of AS 2419.4 for suction gasket requirements.

5.5 Protective end cap

- 5.5.1 Each hose connection must be provided with a protective Storz end cap, being either a blank or dust cap to AS 2419.4:2021 securely attached by a retaining chain or wire.

- 5.5.2 The chain or wire may be an S-hook and chain, S-hook and stainless-steel wire cable, or stainless-steel wire cable crimped with a ferrule, as per clause 3.10 of AS 2419.2–2009 and clause 3.9 of AS 2419.3–2012.

Note: FRNSW recommends using nylon coated stainless steel wire cable crimped by ferrule. The S-hook is prone to being easily damaged and the end cap being lost.

- 5.5.3 The free length of the retaining chain or wire must allow easy removal of the protective Storz end cap.

Note: FRNSW recommends a free play length not less than 150 mm longer than the distance from the anchor point to the fitted position (refer to Figure 1).

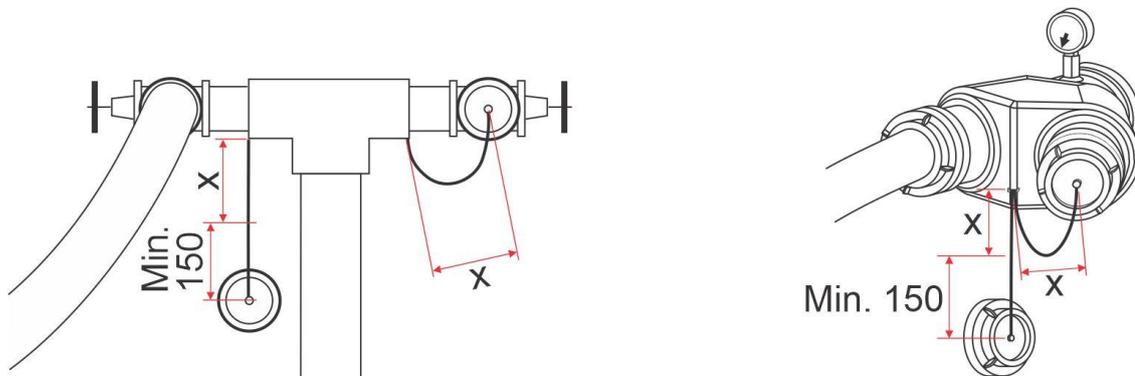


Figure 1 Example of free length required of retaining chain or wire

- 5.5.4 The protective Storz end cap is not pressure or vacuum rated therefore must be provided with a 3 mm pressure relief hole, as per clause 3.10 of AS 2419.2–2009⁷ and clause 3.9 of AS 2419.3–2012⁸.

Note: The relief hole prevents any pressure build up in the case of valve leakage.

⁷ AS 2419.2–2009 Fire hydrant installations: Fire hydrant valves

⁸ AS 2419.3–2012 Fire hydrant installations: Fire brigade booster connections

6 Compliance certification

6.1 New Storz hose connections must demonstrate compliance through product conformity documentation as detailed in Appendix A of AS 2419.4:2021.

Note: The fire protection installer should ensure only AS 2419.4:2021 compliant Storz hose connections are purchased from a reputable supplier.

6.2 The compliance of the new Storz hose connections should be verified by:

- (a) a 'properly qualified person' (i.e. fire protection installer) when being purchased and installed
- (b) the owner or owner's agent who undertakes any assessment for the purpose of issuing a fire safety certificate
- (c) the certifier when undertaking any inspection (e.g. for the purpose of determining an application for an occupation certificate).

6.3 Any noted variation in form, fit or function to AS 2419.4:2021 may mean that the product conformity documentation is false, inaccurate, or misleading. In such cases, conformity should be verified with the product manufacturer.

Note: The building owner has a reasonable expectation that only compliant Storz hose connections are purchased, installed and certified.

7 Contact us

For further information contact the Fire Safety Branch on (02) 9742 7434 or email firesafety@fire.nsw.gov.au.