



GENERAL	BUILDING SAFETY
Storz Hose Connections – Technical Specifications	

1. APPLICATION

This document is intended to be used by firefighters, fire protection installers, plumbers, fire engineers, hydraulic consultants, certifiers, local government authorities and regulatory authorities for the purposes of determining the correct Storz fittings to used for firefighting purposes.

2. PURPOSE

This technical information details Tasmania Fire Service (TFS) requirements for hose connections installed on fire hose lines, fire hydrants, fire sprinkler systems and static supplies and any new or upgraded fire hose lines, fire hydrant, fire sprinkler system and static supplies used for the delivery of water to a building for firefighting purposes.

3. BACKGROUND

In 2011 the TFS Chief Officer made a determination to change from the traditionally used 64mm x 5.08mm pitch (2 ½ x 5 TPI) Whitworth form coupling to a modern more user friendly, light weight coupling in collaboration with most other fire jurisdictions across Australia. Current fire hose lines are fitted with Storz 65mm hermaphrodite couplings to *Australian Standard 2419.4 2021*¹. The objective of this standard is to specify minimum requirements for the design, manufacture, performance and testing of Storz (i.e. quarter turn internal lug two-way) pressure and suction fittings suitable for firefighting purposes.

Poor or inadequate regulation has resulted in cheap and poor-quality connections being imported into Australia that are not suitable for firefighting operations. Generally, only specialist firefighting equipment manufacturers will produce compliant and certified connections suitable for firefighting standards.

4. INTRODUCTION

This guideline applies to all TFS equipment required to be fitted with 65mm hose connections and to 65mm hose connections on any new or upgraded fire hydrant or fire sprinkler system and the use of 'water storage static supply tanks' where 150mm large bore suction connection is installed in any building, facility, or site within Tasmania.

TFS compatible hose connections are required for all delivery hose, fire brigade booster inlets, feed fire hydrant outlets, attack fire hydrant outlets and large bore suction connections. TFS considers the connection part of the fixed system or hydrant as relating to *AS 2419.1-2005*² whether this is attached as an adaptor post manufacture or forms part of the integral device during manufacture.

This specification is based on the operational suitability of the TFS to ensure compatibility with brigade equipment in use and for safe, efficient, and effective firefighting operations and consistent with Australian Standard 2419.4 2021.

¹ Australian Standard AS2419.4 - 2021 – Fire hydrant installations, Part 4: Storz fittings for firefighting purposes.

² Australian Standard AS2419.1 – 2005 (incorporating Amendment No 1 Fire hydrant installations Part 1: System design, installation and commissioning).

5. REGULATIONS AND STANDARDS

The NCC³ Volume 1 requires a fire hydrant system serving a building to be installed in accordance with AS 2419.1: 2021. Additionally, in Tasmania, buildings in bushfire-prone areas generally require a water supply for firefighting which may be a static supply or a reticulated supply with a fire hydrant.

Preface (d) states that the design, installation, and commissioning of fire hydrant systems have inlet and outlet connections that are used with the local fire brigade's firefighting equipment. Clause 9.3 of AS 2419.1-2021 states that above ground fire hydrant valves shall have outlet connections for use with the local fire brigade's firefighting equipment.

Appendix Q of AS 2419.1: 2021 stipulates Storz hermaphrodite to AS 2419.4: 2021 (STORZ). AS 2419.4: 2021 stipulates the minimum requirements for Storz couplings.

Note: TFS no longer use TPI hose couplings on firefighting hoses. Adaptors are carried on fire appliances for use on systems that have TPI inlets and outlets as the current requirements are not retrospective.

5.1 Fire brigade boosters

Clause 1.2 of AS 2419.3-2012⁴ specify fire brigade booster inlet connections are to be fitted with hose connections that comply with local fire brigade requirements. TFS use a 65mm Storz hermaphrodite coupling to AS 2419.4: 2021⁵. All connections must comply with the requirements specified in the 'Appendix A – Product conformity' section of AS 2419.4: 2021

5.2 Fire hydrant valves

Clause 1.2 of AS 2419.2-2009⁶ states the method of attachment of hose connections fitted to fire hydrant valves shall comply with local fire brigade requirements. TFS use a 65mm Storz hermaphrodite coupling to AS 2419.4: 2021. All connections must comply with the requirements specified in the 'Appendix A – Product conformity' section of AS 2419.4: 2021.

5.3 Bushfire-Prone Areas

The Tasmanian *Building Act 2016* provides through the *Directors Determination – Requirements for Building in Bushfire-Prone Areas*, that certain building classes, including private residential properties, are to be provided with a static water supply with approved fittings, if not protected by a reticulated water supply with a fire hydrant.

For static water supplies such as tanks, Table 4.3B of the *Directors Determination – Requirements for Static Water Supply for Firefighting*, part C (e) States "Provide a DIN or NEN standard forged Storz 65 mm coupling fitted with a suction washer for connection to firefighting equipment".

For reticulated water supplies a fire hydrant is defined in the *Directors Determination – Requirements for Building in Bushfire-Prone Areas section 1. Definitions (2)* as:

Fire hydrant – means as described in *AS 2419.1-2005 Fire hydrant installations – System design, installation and commissioning*: An assembly installed on a branch from a water pipeline, which provides a valved outlet to permit a supply of water to be taken from the pipeline for firefighting.

In a bushfire-prone area, all connections must comply with the requirements specified in the 'Appendix A – Product conformity' section of AS 2419.4: 2021

³ National Construction Code, Volume 1, Building Code of Australia Class 2 to Class 9 Buildings

⁴ Australian Standard 2419.3-2012 Fire hydrant installations: Fire brigade booster connections

⁵ Australian Standard 2419.4-2021 Fire hydrant installations – Part 4: Storz fittings for firefighting purposes

⁶ Australian Standard 2419.2-2009 Fire hydrant installations: Part 2: Fire hydrant valves

5.4 The TPI-Storz Adaptor

The TPI-Storz adaptor must satisfy the requirements of AS 2419.4: 2021 to be compatible with TFS equipment and specifications. These requirements specify the TPI-Storz adaptor to be equivalent in fit, form and function to AS 2419.4: 2021 for firefighting Storz. It should be noted that there is no domestic or international standard applying to TPI coupling. Storz coupling fittings shall be manufactured from aluminium alloy using forged processes and comply with AS 2419.4: 2021. Cast aluminium fittings are not permitted. This is a mandatory requirement.

5.5 Tank suction connections

Where a large-bore suction connection is required consistent with AS 2419.1 2021, 150mm large bore connection must be used on 150mm internal diameter (ID) pipework. To meet the operational suitability of Tasmania Fire Service, a 150mm to 125mm reducer and blank cap are required in addition to the requirements of AS 2419.1: 2021, for large bore suction connections.

All 150mm and 125mm Storz fittings must comply with the minimum requirements in AS 2419.4: 2021.

6. MINIMUM REQUIREMENTS

The following requirements must comply with AS 2419.4: 2021:

- Storz assemblies
- Components and dimensions
- Manufacture
- Performance requirements

6.1 Gaskets (washers or rings)

All gaskets must comply with section 3.4, 3.5 and 3.6 of AS 2419.4: 2021



Photo 1.0 - Storz coupling showing a nitrile rubber sealing ring suitable for pressure operation.

- Where the Storz coupling is fitted for a pressure fed water supply i.e. boosters and feed and attack hydrants, a flat rubber sealing ring must be used suitable for pressure fed water supply (refer photo 1.0).



Photo 2 - Storz coupling showing a ribbed nitrile rubber sealing ring suitable for suction

- b) Where the Storz coupling is fitted to a static water supply i.e. bulk water tanks in situ, a ribbed nitrile rubber sealing ring must be used suitable for suction (negative) pressure (refer photo 2).



Photo 3 - Storz coupling showing a flat nitrile rubber packing gasket (washer) suitable for pressure operation.

- c) A flat nitrile rubber packing gasket (washer) suitable for pressure operation. If for a static supply in a bushfire-prone area the packing ring (washer) must be suitable for suction operation.

6.2 Coupling markings and identification

The Storz coupling must be permanently marked in raised lettering consistent with AS 2419.4: 2021 including, but not limited to the following:

- a) The manufacturers name, trademark or logo;
- b) The forging mark as used by the manufacturer.

Note: Any marking that is not a proper forging mark from the forge will likely be rejected.



The above marks show the manufacturers mark and the forge mark.

6.3 Installation

All Storz hose connections and TPI-Storz adaptor connections must be tightly and securely fitted with the flat packing ring in the female portion of the connection providing all thread locking resistance.

6.4 Dust cap or blank cap

It is an operational requirement of TFS that all open ended Storz coupling fittings use a dust cap or blank cap to protect the fitting from the ingress of dust and debris and to protect the gasket (washer) from UV light and potential fatigue.

7. PRODUCT CONFORMITY

Product conformity, coupling testing and certification must comply with Appendix A (normative) Product conformity in AS 2419.4: 2021. TFS will only accept product conformity statements from an independent body as noted in AS 2419.4: 2021.

In most cases, TFS use “Feuer-Vogel” Storz couplings and recommend an equivalent or higher standard of coupling be utilised.

A simple ‘letter of conformity’ from the manufacturer or supplier will not be accepted as evidence of compliance. The full suite of documentation identified in AS 2419.4:2021, Appendix A, A.3 ‘Documentation’ must be provided for product conformity.

TFS may take random samples of couplings and have them independently tested to ensure the manufacturer is maintaining the ‘Product conformity’ requirements with AS 2419.4: 2021.

8. DETERMINING AND MAINTAINING COMPLIANCE

8.1 Responsibilities of the fire protection system installer

The installer is to ensure only compliant hose connections are purchased from a reputable supplier and installed. Poorly made and non-compliant couplings must not be used. The installer must

ensure the manufacturer or supplier is able to provide independent certification of their product consistent with the requirements in AS 2419.4: 2021.

Generally, only manufacturers and suppliers of quality firefighting equipment will produce compliant hose couplings meeting the required technical specifications. **Beware of cheap non-compliant copies especially if purchased in bulk.**

Couplings installed on sprinkler, booster and hydrant systems must be checked as approved couplings as part of the commissioning and certification.

8.2 Regulatory responsibilities

The Building Surveyor or another authorised person should check couplings and connections are compliant when inspecting a premise for fire safety compliance. TFS will issue a directive to change the couplings should they be found to be non-compliant, or the installer/property owner cannot prove compliance, especially if cast aluminium couplings are used rather than forged couplings.

It should be noted that premise owners have a reasonable expectation that only compliant couplings have been installed and certified as per the relevant legislation and standards.

9. GENERAL SAFETY CONSIDERATIONS

This document is to be used in conjunction/collaboration with all relevant Work Health & Safety legislation and regulations and any subordinate legislation and regulations.

This guideline has primarily been written to provide clear direction on the type and quality of couplings to be used for firefighting purposes. At the absolute forefront of its development is the safety of building occupants and firefighters who rely heavily on compliance with the requirements and standards.

Where perceived or actual non-compliant couplings are identified they should be reported to TFS, Building Safety buildingsafetysouth@fire.tas.gov.au

Approved by:



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