

Fixed fire protection installations – Pumpset Systems

UPDATED AS 2941:2013

What is the scope of the Standard?

AS 2941:2013 sets out the requirements for pumpset systems used in various types of fire protection systems. The Standard provides minimum requirements for the design, manufacture, installation and commissioning testing of fire pumpsets.

Publication date:

18 November 2013 (replaces **AS 2941:2008**)

Where is AS 2941:2013 called up?

Plumbing Regulations 2008:

- Schedule 2, Part 2 – Requirements for fire protection work, Section 3 (j)

AS 2941:2013 is a requirement for fire protection work.

Class of plumbing work affected:

Fire Protection Work

Changes and impact

Major changes from the updated version include, but are not limited to, the following:

Section 2: Water Supplies

Clause 2.2: Acceptable sources of supply

Bore pumps are no longer considered acceptable as the primary source of water for fixed fire protection installation pumpset systems. Consequently the advisory *Appendix*

B: Bores for water supply dedicated to firefighting (2008 edition) has been removed. However, bores may still be used to supply suction tanks. *Clause 4.6.1: Drivers for vertical turbine pumps: Permissible Types* continues to restrict the use of electro-submersible motors in turbine pumps to bore water supplies only.

Section 3: General Requirements for Fire Protection Pumpsets

Clause 3.1: General Requirements for Fire Protection Pumpsets

The performance capacity requirements for pumpsets have been harmonised between hydrant and sprinkler systems. Sprinkler systems now use the same percentage based capability ratios of Duty Head to Duty Flow as previously required only for non-sprinkler systems in **AS 2941:2008**.

Clause 3.6.2: Pipe Sizes

The velocity with the pipe at maximum flow is not to exceed four metres a second (m/s) for discharge and suction.

Clause 3.7.5: Pressure Valves

The Standards Australia Committee re-examined the use of pressure relief valves and concluded that they were “not an acceptable way to limit system pressures in cases where substantial variations to suction pressure is encountered”. For that reason the previous provision in **AS 2941:2008** that allowed pressure relief valves in systems connected to mains water that generated a flow of 1800 L/min or less has been deleted.

Clause 3.12.1: Electrical Requirements

It is now compulsory for the main switch/circuit breaker for an electrically driven fire pumpset to be segregated from the pumpset itself within a secure and clearly marked fire pump controller.

The requirements for electrical wiring, switches, batteries and battery chargers has been re-examined in conjunction with the Committee responsible for **AS/NZS 3000 Electrical Installations (Wiring Rules)**.

Section 5: Requirements for Pressure Maintenance Pumps

Clause 5.2 (g) and (h): General Requirements for Jockey Pumps

This clause has been expanded to require that all jockey pumps shall have their own independent controller. Among other requirements these controllers must include an isolator switch, a control circuit breaker and the controller must be connected to a power supply that is isolated from the main fire pump circuit.

Section 6: Fire Hose Reel Pumpsets

Clause 6.3: Compression-Ignition Driven Fire Hose Pumpsets

A new clause outlining specific requirements for compression-ignition driven fire hose pumpsets has been inserted. This clause only applies when the diesel-driven pumpset is the sole source of fire protection within the building. These requirements include: manual starting and stopping devices in case of emergency, mandatory installation of fuel filters, details of minimum required fuel tank size – they must have capacity for at least four

hours - and specific requirements for the layout and operation of the pumpset controller.

Section 9: Compression – Ignition Drivers and Controllers

Clause 9.3.2.2: Liquid Cooling System

Clause 9.3.2.2 is expanded to provide greater clarification around the exact components and arrangements required to be compliant with the Standard.

It is now a specific requirement that all installed flexible reinforced hoses meet the minimum specifications set out by the engine manufacturer.

Clause 9.3.3.1: Electronic fuel management system

This Clause has been revised and the previous requirement for a “standby” Electronic Control Module (ECM) in addition to the primary module has been deleted.

Clause 9.3.6.2: Battery-powered starting systems

The previous requirement in **AS 2941:2008** for primary and secondary manual start solenoids to be mounted next to one another on the engine has been deleted, although they must still be “near” the engine but still outside the controller enclosure.

The **AS 2941:2008** Clause 9.3.6.5 *Air-powered starting systems* has been deleted along with all other references to air-powered starting systems. The Standards Australia Committee believes that these systems are now so rare that no specific reference to them is required.

Clause 9.4.7: Indicator Lights

This clause has been revised so that LCD and plasma lights or displays may also be used instead of filament, neon or LED lights. However displays must be “robust” and include a sufficiently large screen to display all necessary information at once.

Section 10: Shop Testing and Conformance

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This section has been expanded to clarify the testing requirements for manufacturers. The requirements for manufacturers to supply written certification of test results remain the same.

Section 11: Siting and Installation

Clause 11.3: Location

This Clause has been substantially expanded to provide specific minimal requirements for the siting and location of pumpsets. All installations must incorporate a minimum distance of 1 metre around the perimeter. Where pumpsets include multiple pumps there must be at least 60 cm between each individual unit and with the centre-line of all suction pumps installed at the same elevation. Where units are installed at different heights a securely built mezzanine level must be installed at a height of at least 2.1 metres above the floor below. All platforms should also include adequate guard rails and secure access ladders.

Appendix D: The Pump House or Pump Room

A new Appendix outlining the minimum requirements for a pump house or pump room is provided. These include being as close as practicable to the source of water supply and in a position that would protect the unit from falling debris. In addition it is required that; adequate security to prevent unauthorised entry, heating to ensure the room temperature remains above 4 degrees Celsius, adequate signage to ensure emergency responders can locate the pump room in a timely manner, a minimum height of 2.1 metres, adequate internal space to allow maintenance and fully enclosed construction that is properly weather-proofed. There are additional specific requirements depending on the location of the room inside or outside the main building.

The VBA strongly encourages all practitioners carrying out Fire Protection work to consult the updated Standard to ensure they are compliant with all updated requirements. The full text of the Standard can be purchased from [SAI Global website](#):