AS 2941—2008

Australian Standard®

Fixed fire protection installations—Pumpset systems

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The following are represented on Committee FP-008:

- Association of Consulting Engineers, Australia
- Association of Hydraulic Services Consultants, Australia
- Australasian Fire Authorities Council
- Australian Chamber of Commerce and Industry
- Consumers' Federation of Australia
- Fire Protection Association, Australia
- Insurance Council of Australia
- Pump Industry Australia

This Standard was issued in draft form for comment as DR 07193.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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PREFACE

This Standard was prepared by the Standards Australia Committee FP-008, Fire Service Pumps, to supersede AS 2941—2002.

Maintenance requirements for fire pumpsets are given in AS 1851, *Maintenance of fire protection systems and equipment* (Section 3: Fire pumpsets*)*.

The symbols used in this Standard comply with those given in HB 20, *Graphical symbols for fire protection drawings,* and have been developed from ISO Standards. The typical illustrations are in diagrammatic form only.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

Notes and Commentaries

The use of Notes in this Standard is of an advisory nature only. They provide explanations and guidance on recommended design consideration or technical procedures, as well as an informative cross-reference to other documents or publications.

This Standard incorporates a commentary on some of the clauses. The commentary directly follows the relevant clause, is designated by 'C' preceding the clause number and is printed in italics in a box. The commentary is for information and guidance.

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FOREWORD

This Standard sets out to provide requirements for pumpset systems to suit various types of fire protection systems such that a reasonable degree of protection for life and property from fire may be achieved. These requirements are based on sound engineering principles, test data and field experience.

Although the installation of a pumphouse is not a requirement of this Standard, the Committee has considered the fire pumpset and its ancillary equipment as being ideally located in a pumphouse. Requirements are established for the selection, installation and operation of fire pumps, pump drivers and associated equipment, however, the Standard does not consider the number, disposition or types of driver considered appropriate for a given fixed fire protection system. The term ‘driver’ is used in lieu of the term ‘engine’ or ‘motor’.

The committee did not consider the initiation of the starting sequence outside the pumphouse to be within the scope of this Standard. Instead, it has considered the processing of signals entering the pumphouse.

The Standard provides minimum performance requirements for pumpsets including motors, engines, fire pump controllers, batteries and related ancillaries. The Standard requires that pumpsets be shop-tested as an assembly, that is, the pump driver and fire pump controller are to be checked as a working combination (and appropriate test confirmed) prior to dispatch from the pumpset assembler’s works. Further testing will be required following final installation on site, and the Standard requires the incorporation of a flow-measuring device at each pumpset, unless provided elsewhere, to facilitate commissioning and subsequent periodic testing.

The Standard requires that each pump be provided with circulation relief to protect the pump from damage when exposed to extended periods of operation at or near shut-off head. It also requires that some pumps be provided with a pressure-relief/flow control valve to protect downstream piping from overpressurization and protect the pump against suction and discharge recirculation. Circulation- and pressure-relief flow control requirements are addressed in Section 3.

This edition requires automatic overspeed shutdown facilities on compression-ignition (diesel) engine-driven pumpsets. It includes new provisions for optional variable speed control on both compression-ignition engine and electric motor pump drivers. The increasing use of electronic engine management systems has also been recognized with the incorporation of new requirements for such systems that control the fuel injection process.

STANDARDS AUSTRALIA

Australian Standard
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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard specifies requirements for pumpset systems for use with fixed fire protection installations such as sprinkler, hydrant, water spray, and hose reel systems. It covers water supplies and specific requirements for pumps, drivers, fire pump controllers, and auxiliary equipment. Requirements for installation and acceptance testing for electrical and compression-ignition drivers are also included.

NOTES:

1 Some special fire pump installations (e.g., at petrochemical and petroleum plants and small rural installations) may require variations from the requirements of this Standard.

2 Pumpsets covered by this Standard are generally represented in Figures 3.5 and 3.7.

1.2 OBJECTIVE

The objective of this Standard is to provide designers, manufacturers, installers and testers with minimum requirements for the design, manufacture, installation and commissioning testing of fire pumpsets.

1.3 NORMATIVE REFERENCES

The documents referenced in this Standard for normative purposes are listed in Appendix A.

NOTE: Documents referenced for informative purposes are listed in Appendix J, Bibliography.

1.4 DEFINITIONS

For the purposes of this Standard, the definitions below apply.

1.4.1 Approved

Listed in the ‘Register of accredited products’, issued by CSIRO—MIT, as complying with the requirements of this Standard; or approved for fire protection duty by an internationally recognized testing laboratory and approval body such as—

(a) Factory Mutual (FM);

(b) Underwriters Laboratories (UL);

(c) Loss Prevention Council (LPC);

(d) Verband der Schadenverhütung(VdS);

1.4.2 Circulation relief

Prevention of overheating by providing a flow of water to waste when the pump is operating with no discharge.