

# Gas Information Sheet 54

## Schedule 9 – additional information required for Type B appliance acceptance



### Overview

This gas information sheet provides information about the additional, appliance-specific information that must be supplied to Energy Safe Victoria when applying for acceptance of a Type B appliance.

Schedule 9 of the Gas Safety (Gas Installation) Regulations:

- lists the additional information that needs to be supplied
- must be considered in its entirety (and relevant information supplied). If an item is not applicable to your particular appliance, state the reasons why in your application.

Schedule 9 requirements (Parts)	Definitions and explanations
<b>1. Appliance details.</b>	
a) Manufacturer's name.	Name of the company or person who manufactured the appliance.
b) Model identification.	Identification for this appliance type.
c) Nominal gas consumption (MJ/h).	Designed maximum gas consumption for the appliance in megajoules per hour (MJ/h).
d) Gas type.	Fuel gas consumed by the appliance. For example: natural gas, LP gas, biogas, process gas, etc.
e) Maximum and minimum gas supply pressures.	The range of gas pressures that can be supplied to the appliance valve train without adversely affecting the appliance's safety and operation.
f) Purge times.	The calculated purge time in minutes and seconds (as detailed in Part 6).
g) Gas pressure at the burner head for nominal gas consumption (kPa).	The burner gas pressure at high fire gas rate in kilopascals (kPa).
h) Combustion chamber volume (M3).	Volume of the immediate chamber in which the combustion takes place in cubic metres (M3).
i) Purge volume, being the total volume swept from the entry of the purge medium to the point of emission including the interconnecting ductwork.	The purge volume includes the combustion chamber and all areas where combustion products and combustible vapours, dusts, or gases can accumulate in the appliance or process, up to the vertical connection of a flue or chimney that discharges directly to the atmosphere.
j) Serial number.	Unique Identification code for this particular appliance.

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k) Date of manufacture.	Date that this particular appliance was manufactured.
2. Description of the appliance function and any associated industrial process with which the appliance is integrated together with a drawing indicating the general arrangement.	<p>What type of appliance is it?</p> <p>What does the appliance do?</p> <p>If integrated into a process, what is the process?</p> <p>The general arrangement drawing should provide a visual representation of the appliance and its location.</p>
3. Valve train schematic diagram.	<b>See Australian Standard (AS) 3814, Appendix A, FIGURE A1, “EXAMPLE OF A TYPICAL VALVE TRAIN SCHEMATIC”.</b>
A schematic diagram clearly indicating:	
a) All components (including brand and model) and component acceptance numbers.	<p>All components on the schematic are to be identified and must include the:</p> <ol style="list-style-type: none"> <li>1. size, brand, and full model details</li> <li>2. certifying body and acceptance number where component certification is required by AS 3814.</li> </ol>
b) Rated working pressure of all components (kPa).	Maximum pressure (in kPa) stated by the manufacturer or the certifying body.
c) Proposed settings of all adjustable devices.	Settings of regulators, pressure switches and any other adjustable devices are to be provided. It is acknowledged that the proposed settings may change during commissioning.
d) Nominal gas consumption.	Designed maximum operational gas consumption for the appliance.
e) Supply pressure at appliance and burner pressure.	<p>The fuel gas pressure supplied to the valve train and the burner gas pressure at high fire gas rate, with both figures to be displayed on the schematic.</p> <p>This should also include a title block with the appliance identification and installation address.</p>
4. Electrical circuit diagram.	<p><b>Refer to AS 3814, Appendix A, FIGURE A2, “EXAMPLE OF A TYPICAL ELECTRICAL SCHEMATIC DIAGRAM”.</b></p> <p>Only the relevant electrical drawings relating to the appliance burner and associated safety circuits should be provided or page marked on larger multi-page drawings.</p> <p>The drawings must be clear and legible.</p>

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	This should also include a title block with the appliance identification and installation address.
<b>A circuit diagram in ladder-logic format clearly indicating:</b>	
<b>a) Safety and control circuits.</b>	All safety control devices and interlocks circuits are to be included. All relevant components are to be identified.
<b>b) Details of all major components (including brand and model).</b>	Brand, model, and (where applicable) classification and certifying body acceptance numbers are to be identified for flame safeguards, flame detectors, programmable electronic systems (PES), programmable logic controllers (PLC), and any other major component.  If the flame safeguard has adjustable parameters, a statement must be provided that the proposed parameters give the correct classification.
<b>c) Method of operation of all major components.</b>	The drawing should clearly display the appliance's safety and operational logic.
<b>5. Process and instrumentation diagram (P&amp;ID) clearly indicating the relationship between the safety and control functions of the appliance/process.</b>	<b>See AS 3814, Appendix A, FIGURE A3, EXAMPLE OF A P&amp;ID LAYOUT.</b>  Where the particular appliance is of a complex nature, it is important that a P&ID and written operational description is submitted to Energy Safe Victoria.  This information: <ul style="list-style-type: none"> <li>• gives an overall view of both safety and operational instrumentation and its relationship to the various key functioning elements of the appliance</li> <li>• enables Energy Safe to assess the overall impact of critical interlocks on the appliance's safe operation.</li> </ul> Where the operation of the particular appliance is of a complex nature, the P&ID and operational description is needed to provide a 'road map' as to how all the interrelated systems will function safely.  The P&ID should also include a title block with the appliance identification and installation address.
<b>6. Purge time calculation.</b> <b>Calculation of the time required to purge the appliance in accordance with AS 3814, section 2.20, and AS 1375, section 3.8.</b>	The pre-purge calculations should confirm compliance with AS 3814.  The information is to be presented in a format that clearly identifies the formulas used and formula symbols (for example, purge volume, purge air flow rate, and openings) and the units used.

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	The calculations should be presented in a way to enable third party verification.
<p><b>7. Safe start gas rate.</b> Where required by AS 3814, section 3.2.3, and AS 1375, Appendix D, calculations of the safe start gas rate or the critical time for ignition or critical energy.</p>	<p>The critical time calculations should confirm compliance with AS 3814.</p> <p>AS 1375 provides calculation methods for Critical Energy and Critical time calculations.</p> <p>The information is to be presented in a format that clearly identifies the formulas used and formula symbols (for example, start fuel input, volume of the combustion space, and start air rate) and the units used.</p> <p>The calculations should be presented in a way to enable third party verification.</p>
<p><b>8. Explosion relief area and dilution air flow rate (where relevant).</b> If the appliance process involves solvents or dusts and where required by AS 3814 and AS 1375, provide details of, and calculations for, explosion relief area and dilution air flow rates.</p>	<p>The dilution air flow rate and explosion relief area calculations should confirm compliance with AS 3814, Section 2.1.</p> <p>If the appliance process involves solvents, combustible dusts or any other flammable materials other than the fuel gas, the relevant dilution airflow rate and explosion relief calculation is to be provided.</p> <p>The calculations should be presented in a format that clearly identifies the formulas used, formula symbols (for example, dilution air rate, evaporation rate, flame speed, and mean hydraulic diameter), and the units used.</p> <p>The calculations should be presented in a way to enable third party verification.</p> <p>AS 1375, Appendix E, provides explosion relief details and calculations.</p> <p>AS 1375, Appendix F, provides dilution details and calculations.</p>
<p><b>9. Details of flueing.</b> Refer to AS/NZS 5601.1 and AS 1375.</p>	<p>A brief description of the proposed flue system that should include the flue design (for example, a natural draft or power flue and flue terminal location).</p> <p>See AS/NZS5601.1-6.7 and AS1375-6.2.</p>
<p><b>10. Details of ventilation.</b> Refer to AS/NZS 5601.1 and AS 1375.</p>	<p>A brief description of the proposed ventilation system design that provides air for combustion, and the proper operation of the flue, to maintain the temperature of the immediate surroundings at safe limits. It should include the type of ventilation (natural or mechanical).</p>

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	See AS/NZS 5601.1, section 6.4 and AS 1375, section 5.4.
<p><b>11. Commissioning procedures and operating instructions.</b>  <b>Refer to AS 3814, Appendix I, and AS 1375, Section 5.6.</b></p>	<p>For any appliance, especially if technically complex, a commissioning procedure must be developed.</p> <p>AS 3814 and AS 1375 provide the minimum commissioning checks to be carried out. Appendix I provides an example of a typical commissioning procedure.</p> <p>Operating instructions are to be clear and concise to enable Energy Safe to effectively check for compliance with the prescribed standard. Clear operating instructions should be provided to the owner/operator of the appliance after acceptance is granted.</p>

## Who we are

At Energy Safe Victoria we work to keep Victoria energy safe.

We regulate the energy industry and sector to ensure generation, supply and usage uphold safety standards, and engage with the community to raise awareness of energy safety risks.

In everything we do, we strive to deliver on our purpose to keep Victoria energy safe. Always.

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