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Gas Information Sheet No. 54

SCHEDULE 9

ADDITIONAL INFORMATION TO BE SUPPLIED FOR ACCEPTANCE OF A TYPE B APPLIANCE

When Application is made for a Type B appliance, additional information specific to the Type B appliance must be supplied to Energy Safe Victoria (ESV). Schedule 9 of the Gas Safety (Gas Installation) Regulations 2008 lists the additional information to be supplied.

All parts of Schedule 9 must be considered and relevant information supplied. If an item is not applicable to your Type B appliance, state your reasons why in your application.

Information to be supplied for a Type B appliance includes the following items.

SCHEDULE 9 requirements (Parts)	Definitions and explanations
1. Appliance details Details regarding the appliance, including where relevant:	
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 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 burner head for the nominal gas consumption.	The burner gas pressure at high fire gas rate in kilopascals (kPa).
h) Combustion chamber volume.	Volume of the immediate chamber in which the combustion takes place, in cubic metres (M^3).
i) Purge volume, being the total volume swept from the entry of the purge medium to the point of emission including 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.
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	What type of appliance is it? What does the appliance do? If integrated into a process, what is the process? The general arrangement drawing should provide a visual representation of the appliance and its location.

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3. Valve train schematic diagram A schematic diagram clearly indicating:	**Refer to FIGURE A1, "EXAMPLE OF A TYPICAL VALVE TRAIN SCHEMATIC" in Appendix A of AS 3814:2015.**
a) All components (including brand and model) and component acceptance numbers.	All components on the schematic are to be identified and must include the following: 1. Size, brand and model (where required by the standards). 2. Certifying Body and the acceptance number.
b) Rated working pressure of all components.	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 setting may change during commissioning.
d) Nominal gas consumption.	Designed maximum operational gas consumption for the appliance.
e) Supply pressure at appliance and burner pressure.	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.
4. Electrical circuit diagram	**Refer to FIGURE A2, "EXAMPLE OF A TYPICAL ELECTRICAL SCHEMATIC DIAGRAM" in Appendix A of AS 3814:2015.** 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. The drawings must be clear and legible.
A circuit diagram in ladder-logic format clearly indicating:	Should also include a title block with the appliance identification and installation address.
a) Safety and control circuits.	All safety control devices and interlocks circuits are to be included. All relevant components to be identified.
b) Details of all major components (including brand and model).	Brand, model, and (where applicable) classification and Certifying Body acceptance number are to be identified (i.e., flame safeguards, flame detectors, PLC). If the flame safeguard has adjustable parameters, a statement must be provided that the proposed parameters give the correct classification.
c) Method of operation of all major components.	The drawing should clearly display the safety and operational logic of the appliance.
5. Process and instrumentation diagram (P&ID) clearly indicating the relationship between the safety and control functions of the appliance/process	Where the particular appliance is of a complex nature, it is important that a process and instrumentation diagram (P&ID) is submitted to ESV. The P&ID gives an overall view of both safety and operational instrumentation and its relationship to the various key functioning elements of the appliance. The P&ID enables ESV to assess the overall impact of critical interlocks on the safe operation of the appliance. Where the operation of the particular appliance is of a complex nature, the P&ID is needed to provide a 'road map' as to how all the interrelated systems will function safely.

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SCHEDULE 9 requirements (Parts)	Definitions and explanations
6. Purge time calculation Calculation of the time required to purge the appliance in accordance with AS 3814.	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 (i.e., purge volume, purge air flow rate, openings, etc.) and the units used. The calculations should be presented in a way to enable third party verification.
7. Safe start gas rate Where required by AS 3814, calculations of the safe start gas rate or the critical time for ignition or critical energy.	The critical time 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 (i.e., start fuel input, volume of the combustion space, start air rate, etc.) and the units used. The calculations should be presented in a way to enable third party verification. AS 1375 provides calculation methods for Critical Energy and Critical time calculations.
8. Explosion relief area and dilution air flow rate (where relevant) If the appliance process involves solvents or dusts and where required by AS 3814, provide details of, and calculations for, explosion relief area and dilution air flow rates.	The dilution air flow rate and explosion relief area calculations should confirm compliance with AS 3814. 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. The calculations should be presented in a format that clearly identifies the formulas used, formula symbols (i.e. dilution air rate, evaporation rate, flame speed, mean hydraulic diameter etc.), and the units used. The calculations should be presented in a way to enable third party verification. AS 1375-2013 Appendix F provides dilution and explosion relief calculations.
9. Details of flueing	A brief description of the proposed flue system that should include flue design (i.e., natural draft or power flue and termination location).
10. Details of ventilation	A brief description of the proposed ventilation system design that provides air for combustion, and should include the type of ventilation (i.e., natural or mechanical).
11. Commissioning procedures and operating instructions	For any appliance, especially if technically complex, it is vital that a commissioning procedure be developed. AS 3814:2015 provides the minimum commissioning checks to be carried out, and Appendix I provides an example of a typical commissioning procedure. Operating instructions are to be clear and concise to enable ESV 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.
12. In the case of a Type B appliance with a nominal gas consumption of more than 1,000 megajoules per hour, the gross thermal efficiency over its designed operating range and a statement comparing the appliance's efficiency with the best available performance in its class.	Requested by ESV on a needs basis only, otherwise not applicable.