



CSA 3.8:21
National Standard of Canada



Gas-fired equipment for drying farm crops



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CSA 3.8:21

***Gas-fired equipment for drying farm
crops***

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Interprovincial Gas Advisory Council



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Contents

Interprovincial/Territorial Gas Advisory Council	9
Technical Committee on Gas Appliances and Related Accessories	11
Z83/CSA Joint Technical Advisory Group on Gas Operated Agricultural Equipment	13
Preface	15
1 Scope	17
1.1 Applicable equipment	17
1.2 Applicable fuel types	17
1.3 Applicable installation location	17
1.4 Forced draft burner limitation	17
1.5 Construction requirements	17
1.6 Performance requirements	17
1.7 Pressure references	17
1.8 Measurement units	18
2 Reference publications	18
3 Definitions	21
4 Construction	26
4.1 General	26
4.1.1 Dryer construction and materials	26
4.1.2 Asbestos use restriction	26
4.1.3 Securement of parts	26
4.1.4 Prevention of incandescent parts	26
4.1.5 Material suitability	26
4.1.6 Protection from climatic conditions	26
4.1.7 Prevention of water collection	26
4.1.8 Prevention of debris collection	26
4.1.9 Provision for essential components	27
4.1.10 Dryer assembly and test	27
4.1.11 Ventilation for gas train enclosures	27
4.1.12 Fuel-handling component ratings	27
4.1.13 Gas pressure safety devices	27
4.1.14 Machine guarding	27
4.1.15 Air intake openings	28
4.1.16 Air filtering for recirculating mode dryers	28
4.1.17 Dust access for recirculating mode dryers	28
4.1.18 Resistance to wind and snow loads	28
4.1.19 Attachment of insulating materials	28
4.1.20 Characteristics of insulating materials	28
4.1.21 Materials used for pipe fittings	28
4.2 Assembly	28
4.2.1 Attributes of professional assembly	28

4.2.2	Specifications for threaded hardware	28
4.2.3	Corrosion-resistant fasteners	29
4.2.4	Specifications for tap screws	29
4.2.5	Manufacturing tolerances	29
4.2.6	Pipe train assembly	29
4.2.7	Fuel conversion kit usage	29
4.3	Accessibility	29
4.3.1	Verification of minimum clearances	29
4.3.2	Accessibility of controls	29
4.3.3	Igniter and burner observation	29
4.3.4	Access doors and openings	29
4.3.5	Suitability of gaskets	30
4.4	Combustion air and ventilation	30
4.4.1	Specifications for airflow proving devices	30
4.4.2	Criteria for pre-ignition purge	30
4.4.3	Criteria for pre-ignition airflow proving	30
4.4.4	Criteria for dryer shutdown due to airflow loss	30
4.5	Main burners	31
4.5.1	Specifications for burner construction	31
4.5.2	Restrictions in burner gas passageways	31
4.5.3	Criteria for gastight joints	31
4.5.4	Bolt holes in burner gas passageways	31
4.5.5	Gauze use restricted	31
4.5.6	Special tool use restricted	31
4.5.7	Burner assembly	31
4.5.8	Securement of burner parts	31
4.5.9	Burner removal	32
4.5.10	Criteria for burner ignition using carryover flames	32
4.5.11	Combustion system input types	32
4.5.12	Specifications for burner parts constructed of sheet metal	32
4.5.13	Attributes of port fabrication	32
4.5.14	Criteria for tube usage in burner assembly	32
4.5.15	Criteria for manifolds servicing two or more burners	32
4.6	Primary air adjustment means	32
4.6.1	Adjustment of primary air flow	32
4.6.2	Criteria for air meter usage and design	32
4.6.3	Setting and accessing primary air adjustment means	33
4.7	Combustion air adjustment means	33
4.7.1	Criteria for combustion airflow controlling device	33
4.7.2	Air-gas ratio for fuels	33
4.7.3	Criteria for fuel and air control linkages	33
4.7.4	Criteria for mixing fuel and combustion air under pressure	33
4.8	Orifices and orifice fittings	33
4.9	Automatic gas ignition systems	33
4.9.1	Specifications for automatic gas ignition systems	33
4.9.2	Methods of function for automatic gas ignition systems	34
4.9.3	Criteria for proper operation of automatic gas ignition systems	34
4.9.4	Maximum safety control timings	34
4.9.5	Criteria for purge management	35

- 4.9.6 Criteria for components that establish purge periods 35
- 4.9.7 Criteria for pre-ignition purge on stacked-module dryers 35
- 4.9.8 Criteria for flame detection on burners wider than 42 inches 35
- 4.9.9 Additional requirements for interrupted ignition sources 36
- 4.9.10 Accessibility of automatic ignition device 36
- 4.9.11 Criteria for observation of pilot burner 36
- 4.9.12 Criteria for slotted ports 36
- 4.9.13 Securement and accessibility of components 36
- 4.9.14 Component placement to avoid debris 36
- 4.9.15 Placement of automatic ignition devices 36
- 4.9.16 Accessibility of air openings and orifices 36
- 4.9.17 Pilot burner clearance 36
- 4.9.18 Specification for pilot burner construction 37
- 4.9.19 Criteria for flame supervision 37
- 4.9.20 Criteria for spark ignition transformer 37
- 4.10 Flame spreaders 37
- 4.11 Operating pressure ratings for components of valve trains 37
- 4.12 Manual gas valves 37
 - 4.12.1 Specifications for manual gas valves 37
 - 4.12.2 Lubricant resistance to liquefied petroleum 37
 - 4.12.3 Criteria for manual gas valves 38
 - 4.12.4 Criteria for manual gas valves used with pilot burners 38
 - 4.12.5 Options for manual shutoff of main burner gas 38
 - 4.12.6 Criteria for test firing valve 38
 - 4.12.7 Specifications for test gauge connection upstream of firing valve 38
- 4.13 Gas supply lines 38
 - 4.13.1 Specifications for steel pipe 38
 - 4.13.2 Criteria for supply line bending 38
 - 4.13.3 Removal of burrs and loose particles from piping 39
 - 4.13.4 Specifications for semi-rigid tubing 39
 - 4.13.5 Aluminum tubing use restricted 39
 - 4.13.6 Criteria for use of copper semi-rigid tubing 39
 - 4.13.7 Criteria for use of nonferrous semi-rigid tubing 39
 - 4.13.8 Temperature specifications for tubes and fittings 40
 - 4.13.9 Criteria for use of steel pipe in pilot lines and manifolds 40
 - 4.13.10 Pipe and tubing support 40
 - 4.13.11 Criteria for joint compounds 40
 - 4.13.12 Criteria for gas line unions 40
 - 4.13.13 Specifications for test gauge connection 40
 - 4.13.14 Inlet pressure and valve seal leakage measurements at safety shutoff valves 41
 - 4.13.15 Manifold removal 41
 - 4.13.16 Criteria for use of bushings 41
 - 4.13.17 Burner supply pipe support and connections 41
 - 4.13.18 Criteria for sediment trap usage 41
 - 4.13.19 Criteria for prevention of gas supply connection contamination 41
 - 4.13.20 Criteria for fuel line pipe, tubing, and fittings 41
 - 4.13.21 Criteria and specifications for use of flexible hose 41
- 4.14 Additional requirements for liquid propane valve trains 42
 - 4.14.1 General 42

- 4.14.2 Specifications for steel pipe used in propane valve trains 43
- 4.14.3 Criteria for components used in liquid propane lines 43
- 4.14.4 Locations for hydrostatic relief valve installation 43
- 4.14.5 Location for liquid line strainer installation 43
- 4.14.6 Criteria for outdoor venting 43
- 4.14.7 Criteria for enclosure ventilation 43
- 4.14.8 Criteria for liquid propane supply line to a vaporizer with a burner 43
- 4.15 Criteria for usage of bleeds and vents 43
- 4.16 Automatic gas valves 44
- 4.16.1 Specifications for automatic gas valves 44
- 4.16.2 Required action for electrically operated valves 44
- 4.16.3 Required action for pressure operated valves 44
- 4.16.4 Location of automatic safety shutoff valves 44
- 4.16.5 Valve train requirements for various Btu/h input ratings 44
- 4.16.6 Requirements for valve seal overtravel interlock 44
- 4.16.7 Requirement for test port 44
- 4.16.8 Manual operation of automatic valve not permitted 45
- 4.16.9 Criteria for operation of reverse acting gas actuated controls 45
- 4.16.10 Safety shutoff valve maximum closing time 45
- 4.17 Hydrostatic relief valve 45
- 4.17.1 Criteria for hydrostatic relief valve selection and installation 45
- 4.17.2 Criteria for use of common discharge header 45
- 4.18 Input flow control systems 45
- 4.18.1 Criteria for use of input flow control valve 45
- 4.18.2 Requirements for automatically operated input flow control valves 45
- 4.18.3 Requirements for electronic type fuel/air ratio control systems 45
- 4.19 Gas appliance pressure regulators 46
- 4.19.1 Specifications for gas appliance pressure regulators 46
- 4.19.2 Criteria for use of pressure regulators for different fuels 46
- 4.19.3 Criteria for use of single regulator for both pilot and main burner 46
- 4.19.4 Requirement for regulation of pilot gas 46
- 4.19.5 Requirement for positive shut-off regulator 46
- 4.19.6 Requirement for spring-loaded or pressure-balanced regulators 46
- 4.19.7 Criteria for regulator outlet pressure range 47
- 4.19.8 Bypass of pressure regulator not permitted 47
- 4.19.9 Criteria for use of independent regulator for pilot burner 47
- 4.19.10 Criteria for use of overpressure protection device in pilot line 47
- 4.20 Adjustment of minimum input rating 47
- 4.21 Pilots and pilot lines 47
- 4.21.1 Pilot pre-ignition purge 47
- 4.21.2 Pilot input limitations 47
- 4.21.3 Criteria for pilot burner removal 47
- 4.21.4 Pilot supervision 47
- 4.21.5 Requirement for main flame supervision 47
- 4.21.6 Criteria for pilot proving 48
- 4.21.7 Pilot train requirements for different Btu/h input ratings 48
- 4.21.8 Pilot supply takeoff 48
- 4.21.9 Criteria for pilot manual shutoff valves 48
- 4.21.10 Pilot burners 48

4.21.11	Criteria for test firing valves	49
4.22	Operating and limit controls	49
4.22.1	Criteria for temperature controls	49
4.22.2	Criteria for use of relays with safety gas valves	50
4.22.3	Requirements for primary temperature limit control	50
4.22.4	Labelling requirements for temperature limit controls	50
4.22.5	Accessibility of operating controls and limit controls	50
4.22.6	Criteria for use of secondary temperature limit control	50
4.22.7	Criteria for use of safety relay in limit circuit	50
4.22.8	Criteria for use of individual relays in limit circuit	51
4.23	Thickness of materials	51
4.23.1	Material suitability	51
4.23.2	Criteria for sheet-iron and steel	51
4.23.3	Corrosion protection	51
4.24	Motors	52
4.24.1	Specifications for electric motors	52
4.24.2	Criteria for motors exposed to weather	53
4.24.3	Criteria for motors not exposed to weather	53
4.24.4	Criteria for motor operating temperatures	53
4.24.5	Lubrication requirements	53
4.24.6	Criteria for openings in motor housings	53
4.25	Fans	53
4.25.1	Criteria for fan usage and accessibility	53
4.25.2	Flame impingement on fan surfaces	54
4.26	Air filters	54
4.27	Integral vaporizers for direct-fired application	54
4.27.1	Vaporizer minimum working pressure	54
4.27.2	Relief valve protection	54
4.27.3	Requirement for manual shutoff of main burner and pilot gas	54
4.27.4	Fusible plug use restriction	54
4.27.5	Material selection for vaporizer components	54
4.28	Instructions	54
4.28.1	Criteria for instruction plates	54
4.28.2	Instructions for checking gas tightness	54
4.28.3	Instructions for assembly, installation, and operation	54
4.28.4	Units of measure used in instructions	55
4.28.5	Inclusion of fire and explosion hazard warnings	55
4.28.6	Use of English and French languages for instructions	56
4.28.7	Requirements for content of instructions	56
4.28.8	Requirements for electrical diagrams	56
4.28.9	Recommendation for wire colour in electrical diagrams	57
4.28.10	Inclusion of electrical diagrams in operator's manual	57
4.28.11	Replacement wiring	57
4.28.12	Instructions for field wiring	57
4.28.13	Instructions for pilot flame adjustment	57
4.28.14	Instructions for checking gas tightness of safety shutoff valves	57
4.28.15	Instructions for entering dryer	57
4.28.16	Instructions for cleaning recirculating air duct	57
4.28.17	Instructions for installation of manual emergency shutoff valve	57

4.29	Marking	57
4.29.1	Specifications for marking materials	57
4.29.2	Criteria for instruction marking	58
4.29.3	Use of English and French languages for markings	59
4.29.4	Combining instruction and rating label content	59
4.29.5	Criteria for primary rating plate	59
4.29.6	Criteria for secondary rating plate	59
4.29.7	Inclusion of flammable vapours and liquids warning	60
4.29.8	Identification of field wiring entry locations	60
4.29.9	Wire temperature marking	60
4.29.10	Temperature limit control marking	61
4.29.11	Sequence of operation and operating limitation markings	61
4.30	Electrical	61
4.30.1	Specifications for electrical equipment and wiring	61
4.30.2	Requirement for use of single branch circuit	61
4.30.3	Requirement for components exposed to weather	61
4.30.4	Requirement for separation of electrical and gas controls	61
4.30.5	Requirement for electrical power failure protection	62
4.30.6	Requirement for fuel shut off during electrical failure	62
4.31	Specifications for programmable controllers	62
4.32	Protection of service personnel	62
4.32.1	Minimization of accidental contact with electrical and mechanical hazards	62
4.32.2	Safe access to electrical control components	62
4.32.3	Safety measures for removal of machine guarding	63
5	Performance	64
5.1	General	64
5.1.1	Applicable fuel types for performance testing	64
5.1.2	Selection of fuel for performance testing	64
5.1.3	Voltage for performance testing	64
5.1.4	Use of vent lines during performance testing	64
5.1.5	Specification of air throughput for performance testing	64
5.1.6	Performance testing at maximum and minimum static pressure	64
5.1.7	Use of test duct	64
5.1.8	Location for measuring inlet air temperature	65
5.1.9	Criteria for measurement of ambient air temperature	65
5.1.10	Burner adjustment for performance testing	65
5.1.11	Criteria for acceptable equipment operation	65
5.1.12	Investigation of anticipated abnormal conditions	65
5.1.13	Criteria for performance testing under abnormal conditions	65
5.1.14	Dryer installation and operation during performance testing	66
5.1.15	Specifications for thermocouples used during performance testing	66
5.1.16	Use of vent lines during performance testing	66
5.1.17	Criteria for testing automatic step-rate or modulating controls	66
5.1.18	Provision for testing extremes of manufacturing tolerances	66
5.1.19	Criteria for performance testing sample equipment	66
5.1.20	Criteria for performance testing at different altitudes	67
5.2	Characteristics of Test Gases used for performance testing	67
5.3	Test pressures and burner adjustments	67

5.3.1	Performance testing at manufacturer's specified ratings	67
5.3.2	Criteria for minimum test input rate	67
5.3.3	Locations for gas pressure measurements	67
5.4	Basic test arrangement	67
5.5	High temperature limit control system	68
5.6	Airflow sensing systems	68
5.6.1	Minimum air throughput test	68
5.6.2	Exceeding maximum air throughput test	69
5.6.3	Separate combustion air fan test	69
5.7	Operating temperature control system	70
5.8	Burner operating characteristics	70
5.8.1	Criteria for burner operation tests	70
5.8.2	Burner flame reaction test	71
5.8.3	Burner ignition test	71
5.8.4	Burner testing at increased and decreased supply voltage	72
5.9	Burners and safety shutoff devices	72
5.9.1	Main burner ignition via pilot test	72
5.9.2	Automatic gas ignition system temperature test	72
5.9.3	Automatic pilot igniter gas-air ratio test	73
5.9.4	Automatic pilot igniter reliability test	73
5.10	Piloted ignition systems	74
5.10.1	Specifications for piloted ignition systems	74
5.10.2	Criteria for proper adjustment of piloted ignition systems	74
5.10.3	Voltage variation and pilot rate reduction ignition tests	74
5.10.4	Flame failure response time test	74
5.10.5	Maximum temperatures test	75
5.11	Direct ignition systems	75
5.11.1	Specifications for direct ignition systems	75
5.11.2	Trial for ignition timing verification test	75
5.11.3	Voltage variation ignition test	75
5.11.4	Flame failure response time test — Gas supply shut off	76
5.11.5	Normal inlet pressure ignition test	76
5.11.6	Flame failure response time test — Gas supply shut off and then restored	76
5.11.7	Excessive flame flashback test	76
5.11.8	Flame failure response time test — Flame sensor disabled	77
5.11.9	Criteria for maximum temperatures of components	77
5.12	Gas appliance pressure regulators	77
5.13	Automatic valves	77
5.14	Main burner and flame spreader temperatures	78
5.14.1	Burner temperature test	78
5.14.2	Flame spreader temperature test	78
5.15	Non-load-bearing combustion gas baffle temperatures	79
5.16	Manifold and control assembly capacity	80
5.17	Power interruption	80
5.18	Wall, floor (optional), ceiling, electrical equipment, and wiring temperatures	80
5.19	Rain test	84
5.20	Wind test	87
5.21	Rain and wind tests for inlet air openings	88
5.21.1	Rain test for inlet air openings	88

- 5.21.2 Wind test for air inlet openings 88
- 5.22 Burner durability 89
- 5.23 Electrical tests 89
 - 5.23.1 Specifications for electrical tests 89
 - 5.23.2 Criteria for proper grounding 89
 - 5.23.3 Dielectric strength test 89
- 5.24 Marking material adhesion and legibility 90

6 Manufacturing and production tests 91

- 6.1 Purchased components and dryer sub-assembly checks 91
- 6.2 Assembled dryer operational tests 91

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- Annex A (normative) — Instructions and markings 92
 - Annex B (informative) — Maximum allowable temperatures for materials 95
 - Annex C (informative) — Guidelines for fuel air ratio control (FARC) systems 97
 - Annex D (informative) — Pertinent references to ANSI Y14.15 100
 - Annex E (informative) — Wire colour designations 101
 - Annex F (informative) — Recommended wire colour usage 102
 - Annex G (informative) — Preferred graphic symbols of commonly used items, extracted from ANSI/IEEE 315 103
 - Annex H (informative) — Pipe train diagram 105
 - Annex I (informative) — Provisions for listed gas appliance conversion kits 111

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Preface

This is the seventh edition of CSA 3.8, *Gas-fired equipment for drying farm crops*. It supersedes the previous editions published in 2014, 1999, 1986, 1977, 1972, and 1968.

The seventh edition of this Standard has been updated to reflect current industry practice and address CSA Group's guide on drafting Standards. The major changes to this edition include the following:

- a) input rating has been increased from 12 500 000 BTU to 20 000 000 BTU;
- b) Annex I has been added. This Annex permits manufacturers to offer certified fuel conversion kits;
- c) this Standard has been updated to align with changes in CSA B149.3:20;
- d) warning boxes have been revised;
- e) inhabited building by dwelling units have been replaced; and
- f) criteria have been added for stacked dryers.

This Standard was prepared by the Z83/CSA Joint Technical Advisory Group on Gas Operated Agricultural Equipment, under the jurisdiction of the Technical Committee on Gas Appliances and Related Accessories and the Strategic Steering Committee on Standards for Gas Appliances and Related Accessories, and had been formally approved by the Technical Committee and the Interprovincial/Territorial Gas Advisory Council.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

Interpretations: The Strategic Steering Committee on Standards for Fuel Burning Equipment has provided the following direction for the interpretation of standards under its jurisdiction: "The literal text shall be used in judging compliance of products with the safety requirements of this Standard. When the literal text cannot be applied to the product, such as for new materials or construction, and when a relevant committee interpretation has not already been published, CSA Group's procedures for interpretation shall be followed to determine the intended safety principle."

Notes:

- 1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
- 2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
- 3) *This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
- 4) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include "Request for interpretation" in the subject line:*
 - a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
 - b) *provide an explanation of circumstances surrounding the actual field condition; and*
 - c) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

Committee interpretations are processed in accordance with the CSA Directives and Guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.

- 5) *This Standard is subject to review within five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line:*
 - a) *Standard designation (number);*
 - b) *relevant clause, table, and/or figure number;*

- c) *wording of the proposed change; and*
- d) *rationale for the change.*

CSA 3.8:21

Gas-fired equipment for drying farm crops

1 Scope

1.1 Applicable equipment

This Standard applies to newly produced direct gas-fired crop dryers of the recirculating or non-recirculating type, hereinafter referred to as “dryers”, the primary purpose of which is to provide process heating to dry farm crops. These dryers are used in non-occupied spaces and are constructed of non-combustible materials having input ratings of 20 000 000 Btu/h (5 861 421 W) or less, constructed entirely of new unused parts and materials. A stacked dryer composed of individual burner units or modules, each having an input rating of 20 000 000 Btu/h (5 861 421 W) or less, and where each individual burner unit or module is equipped with its own burner control, is also considered to be within the scope of this Standard.

This Standard refers to equipment in which heated air is used to reduce the moisture content of farm crops.

The installation is to conform with local codes, or in the absence of local codes, in accordance with the CSA B149.1 and CSA B149.2.

This Standard is intended to cover complete dryers with integral air moving components, i.e., those which are designed by, catalogued by, and built on a repetitive basis by the manufacturer, and those in which the dryer and air moving components are tested as an assembly and available for separate sale.

1.2 Applicable fuel types

Dryers covered under this Standard are for use

- a) with natural gas; and
- b) with propane in the liquid and vapour phase.

1.3 Applicable installation location

This Standard applies to dryers intended for outdoor use only.

1.4 Forced draft burner limitation

This Standard is limited to dryers that are equipped with forced draft burner(s) which rely on combustion air supplied by a mechanical device, such as a fan or blower.

1.5 Construction requirements

The construction of dryers for use with the above-mentioned gases is covered under Clause [4](#).

1.6 Performance requirements

The performance of dryers for use with the above-mentioned gases is covered under Clause [5](#).

1.7 Pressure references

All references to pressure throughout this Standard are to be considered “gauge” pressure, unless otherwise specified.