



CSA 3.8:21
National Standard of Canada



Gas-fired equipment for drying farm crops



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

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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.