Fuels Safety Program	Ref. No.: FS-279-26
Gaseous Fuels **Code Adoption Document Amendment**	**Publication Date:** April 2, 2026 **Effective Date:** June 1, 2026

IN THE MATTER OF:

Technical Standards and Safety Act 2000, S.O. 2000, c. 16,
Ontario Regulation 223/01 (Codes and Standards Adopted by Reference), *and*
Ontario Regulation 212/01 (Gaseous Fuels)

The Director for the purposes of Ontario Regulation 212/01 (Gaseous Fuels), pursuant to section 6(1) of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference), hereby provides notice that the GASEOUS FUELS CODE ADOPTION DOCUMENT published by the Technical Standards and Safety Authority and dated June 1, 2001, as amended, is further amended as follows:

All sections of the Code Adoption Document dated June 1, 2001, as amended, are revoked and replaced with the following:

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Background

This Code Adoption Document (CAD) amendment will become effective on **1st of June 2026**, superseding FS-225-21 dated May 1, 2021.

Significant changes made by this amendment include:

- Adoption of CSA B149.1 (2025) Natural gas and propane installation code with Ontario amendments
- Adoption of CSA B149.3 (2025) Field Approval of Fuel Related Components on Appliances and Equipment Code with Ontario amendments
- Adoption of Annex J of CSA B149.3 for Mobile Food Service Equipment with Ontario amendments, which replaces the TSSA MFSE Code.
- Adoption of CSA B149.6 (2025) Biogas Generation and Utilization Code, with Ontario amendments, which replaces the previous TSSA Digester, Landfill and Biogas (DLB) Code
- Adoption of NFPA 160 (2021) Standard for the use of Flame effects Before an Audience, with Ontario amendments.

General

Any term defined by the *Technical Standards and Safety Act 2000* or O. Reg. 212/01 (Gaseous Fuels) has the same meaning in this document unless otherwise specified.

In the event of conflict between a provision of this document and any code or standard referred to in this document, this document shall prevail.

Any person involved in an activity, process or procedure to which this document applies shall comply with this document.

1.0 Natural Gas and Propane Installation Code

The National Standard of Canada B149.1-25 titled "Natural gas and propane installation code" prepared by the Canadian Standards Association is adopted with the following amendments:

1.1 Section 2 is amended by adding the following references:

CSA 6.19-17
Residential carbon monoxide alarming devices

ANSI Z21.5.1-/CSA 7.1
Gas clothes dryers, volume I, type 1 clothes dryers

ANSI Z21.5.2/CSA 7.2
Gas clothes dryers, volume II, type 2 clothes dryers

CGSB 41-GP-25M (withdrawn)
Pipe, Polyethylene, for the Transport of Liquids

NFPA 160
Standard for the use of Flame Effects Before an Audience, 2021 Edition

1.2 Section 3 is amended by revoking the definitions of "Appliance" and "Approved" and replacing the definitions with the definitions provided in Ontario Regulation 212/01 (Gaseous Fuels).

1.3 Section 3 is amended by revoking the definition of “Authority having jurisdiction” and replacing it as follows:

Authority having jurisdiction means the Director designated for the purposes of O. Reg. 212/01 (Gaseous Fuels)

1.4 Section 3 is amended by adding the following definitions:

Clothes dryer - an appliance used to dry wet laundry by means of heat derived from the combustion of fuel gases. Dryer classifications are as follows:

Type 1 Household
1. Intended for use in residential homes
2. Gas supply pressure not exceeding 0.5 psi

Type 1 Commercial
1. Intended for intermittent duty in common laundry facilities of multifamily dwellings with or without payment collection means
2. May include installations requiring the appliance to be fastened to the building structure
3. Gas supply pressure not exceeding 0.5 psi

Type 2
1. Intended for continuous duty in multiple family and commercial applications with or without payment collection means
2. May include installations requiring the appliance to be fastened to the building structure
3. Gas supply pressure not exceeding 0.5 psi

1.5 Clause 4.1.5 is revoked and the following substituted for it:

4.1.5
Where a conflict exists between the manufacturer's certified installation instructions and this Code, the most stringent of the two shall prevail.

1.6 Clause 4.2.3 is revoked and the following is substituted for it:

4.2.3
The approval of the assembly or construction of an appliance is regulated by the authority having jurisdiction and shall comply with Section 2.0 of this CAD (Field Approval Code).

1.7 Clause 4.3.5 is revoked and the following is substituted for it:

4.3.5
When the installation or conversion of an appliance constitutes a conversion from another form of energy, the installer shall at the time of installation or conversion,

(a) in the case of a fuel oil tank,

(i) remove the fill pipe and cap or plug the exposed fill pipe opening to an inside tank; however, do not remove the tank vent pipe.

(ii) shut off the tank outlet ***valve***, remove the filter, and plug or cap the ***valve*** outlet;

(iii) where the tank is located outdoors, disconnect all exposed piping or tubing as close as practicable to the tank; cap or plug the exposed fill pipe opening to the tank; however, do not remove the tank vent pipe and

(iv) advise the owner/operator of the tank in writing that the tank may be required to be removed in accordance with the Fuel Oil Regulation and the oil shall be removed by a certificate holder trained for the purpose.

b) in the case of a fuel oil central distributing system,

i) to shut off the fuel oil supply line valve located within the building; and

ii) to disconnect the fuel oil supply line immediately downstream of the meter, and cap or plug the outlet of the meter;

c) in the case of a propane system,

i) to shut off the cylinder or tank valve; and

ii) to disconnect and cap or plug the propane gas piping system outdoors; and

d) in the case of an electrical appliance,

i) to shut off the power supply to the electrical appliance at the switch; and

ii) to ensure that the overcurrent protection, fuse, or circuit breaker has been removed or put in the off position.

1.8 Clause 4.5.5 is revoked and the following is substituted for it:

4.5.5
An appliance that has been exposed to fire, explosion, flood, or other damage shall not be offered for sale, installed, re-activated or reconnected to the supply, without:

(a) approval of the authority having jurisdiction; or

(b) inspection and confirmation by a Gas Technician 1 or 2 (as appropriate for the appliance input rating) that it is fit for continued use.

1.9 Clause 4.14.3 is revoked and the following substituted for it:

4.14.3
An access opening with minimum dimensions of 21-3/4 × 35-1/2 in (550 × 900 mm) shall be provided to the space in which an appliance is located.

1.10 Clause 4.14.6 (a) is revoked and the following substituted for it:

4.14.6
(a) the appliance shall be installed on a well-drained surface. When water stands on the roof, either at the appliance or in the passageways to the appliance, or when the roof is sloped more than 2%, or has a water seal, or has a slippery surface, a suitable anti-skid walkway shall be provided. Such a walkway shall be located adjacent to the appliance and control panels, and when the appliance is located on a sloped or slippery roof, the walkway shall extend from the appliance to the point of access and be equipped with guardrails so that the appliance can be safely accessed and serviced

1.11 Clause 4.14.7(b) is revoked and the following substituted for it:

4.14.7
…
(b) other means of service access that meet the requirements of the *Occupational Health and Safety Act*, R.S.O. 1990 c. O.1, and its regulations.

1.12 Clause 4.16.4 is revoked and the following substituted for it:

4.16.4
Where a forced air appliance for heating an attached residential building is installed within a residential garage, no opening shall be located in the portion of the appliance return air system located within the garage and the return air system shall be made airtight to prevent the infiltration of air from inside the garage.

1.13 Clause 5.1 is amended by adding to it the following clauses:

5.1.8
Any installation requiring pressures in excess of those specified in Table 5.1 shall be approved by the Director.

5.1.9
Outdoor natural gas installations exceeding 125 psig delivery pressure shall be approved by the Director.

1.14 Clause 6.7.2 is amended by adding the following note to the end of the clause:

Note: The concealed space resulting from installation of a metal liner in a chimney, if examined and found to be clear and free of soot and creosote, may be used to install one continuous length of non-coated piping or tubing.

1.15 Clause 6.13.2(a) is revoked and the following substituted for it:

(a) The minimum depth of the pocket shall be either 3 in (75 mm) or equal to the internal diameter of the piping it serves, whichever is greater.

1.16 Clause 6.15.4 is revoked and the following substituted for it:

6.15.4
Piping and tubing shall be located:

(a) Neither less than 15 in (400 mm) underground nor less than 24 in (600 mm) under a commercial driveway or parking lot, except when it rises above ground at the point of supply to either a building or an outdoor appliance. Additional depth of cover shall be required where the piping is located in areas where physical damage is likely to occur, such as farm operations.

(b) Where, due to rocky terrain, it is impractical to comply with section 6.15.4 (a), piping and tubing systems may be installed in accordance with **Annex P.**

1.17 Clause 6.18.2 is revoked and the following substituted for it:

6.18.2
A manual shut-off valve shall be installed:

(a) in either the drop or riser as close as possible to the valve train of a commercial or industrial-type appliance;

(b) in either the drop or riser of a residential appliance;

(c) in the horizontal piping between the drop or riser and the appliance valve train; it may be the same size as the appliance connection when located within 2 ft (600 mm) of the appliance;

(d) within a maximum of 50 ft (15 m) of the residential appliance that it serves and shall be identified as to the appliance it serves by means of either:

(i) a metal tag attached to the valve; or

(ii) a clear legible sign displayed in a permanent manner adjacent to the valve; and

(e) so that it is readily accessible.

1.18 Table 6.3 Note (2) is revoked and the following substituted for it:

(2) Wrapped and or factory-coated piping or tubing of all sizes and lengths, other than Corrugated Stainless Steel Tubing (CSST) and coated copper tubing, shall be tested at a minimum pressure of 100 psig (700 kPa) in accordance with the time duration on the table. CSST and coated copper tubing shall be tested in accordance with the requirements of the main body of Table 6.3.

1.19 Clause 6.22 is amended by adding to it the following clauses:

6.22.7
The person required to perform the pressure test specified in 6.22.2 or the leak test specified in 6.22.4 shall immediately thereafter attach a tag stating the following information to the piping, tubing system or an appliance in a readily accessible location protected from the environment:

(a) Address of test;

(b) Contractor’s name (if applicable, see note below);

(c) Contractor’s registration number (if applicable, see note below);

(d) Date of test;

(e) Test pressure;

(f) Test duration;

(g) Total pipe length;

(h) Pipe size;

(i) Gas Technician name;

(j) Gas Technician certificate number and classification; and

(k) Statement: "DO NOT REMOVE".

Note: *The information required in 6.22.6(b) and (c) (contractor name and registration number) may be completed as "N/A" if the gas technician completing the test or his or her employer was not required to register as a contractor at the time the test was performed; e.g. a factory, hospital or university that employs maintenance staff with appropriate gas certificates.*

6.22.8

A sticker containing all required information noted in 6.22.7 may be used in-lieu of a tag. This sticker shall be placed on a visible, readily accessible and non-removable surface of the appliance

1.20 Clause 7.1 is amended by adding the following clauses to it:

7.1.4
A boiler not covered under 7.1.1 shall conform to the requirements of clauses 7.1.5 through 7.1.10 as applicable.

7.1.5
Every steam boiler not under continuous attendance by a certified operator shall be equipped with a low-water fuel cut-off device that serves no other purpose and that cannot be rendered inoperative and can be tested under operational conditions.

7.1.6
Except as permitted under clauses 7.1.7, 7.1.8 and 7.1.9, every automatically fired hot-water heating boiler shall be equipped with a low-water cut-off device to shut off the fuel supply in the event of low water when:

(a) the input to the boiler is in excess of 120 kW (400,000 Btu/hr); or

(b) portions of the circulating system are located below the boiler's lowest safe permissible water level regardless of the input, and the sensing element of the device shall be located above the lowest safe permissible water level established by the boiler manufacturer.

7.1.7
The circulation system indicated in 7.1.6 (b) does not include:

(a) Piping, headers and components required for the bottom connections of the boiler and piping within 6 feet (2 m) of the boiler, or

(b) Residential combo fan coil units or in-floor heating applications and all connecting piping and required components.

Boilers not requiring low water cut off devices by meeting the exemption requirements of 7.1.7 (a) or (b) shall be equipped with a flow-sensing device installed integral to the boiler. The function of the device shall be to shut off the fuel supply when the circulating flow is interrupted.

7.1.8
A coil-type boiler or a water tube boiler having an input in excess of 120 kW (400,000 Btu/hr) requiring forced circulation to prevent overheating of the coils or tubes, shall be equipped with a flow-sensing device installed integral to the unit or within the outlet piping in place of the low water fuel cut-off device required in sub clause 7.1.6 (a), and the sole function of the device shall be to shut off the fuel supply when the circulating flow is interrupted.

7.1.9
When two or more hot water boilers of the coil or fin-tube type are installed in one system, a low water fuel cut-off device shall not be required on each boiler, provided that a low water cut-off device is installed on the main water outlet header and a flow switch is installed integral to the unit or within the output piping of each boiler that will cut off the fuel supply to the burner on the boiler. These devices shall be installed so that they cannot be rendered inoperative. The installation of low-water cut-offs shall be such that they can be tested under operating conditions.

Note: The term "tested under operating conditions" is a procedure that tests closure of the fuel supply valves in response to a simulated low water condition.

7.1.10
A pressure type low-water fuel cut-off device is not acceptable for compliance with clauses 7.1.5 & 7.1.6.

7.1.11
The pressure relief device on a boiler 400,000 Btu/hr or less shall have a discharge pipe of a size at least equal to the nominal size of the device outlet. The discharge pipe shall terminate not more than 12 in (300 mm) above the floor.

7.1.12
1. A new or replacement residential boiler with input less than 300,000 Btu/hr shall be:
    (a) a direct vent type, where the direct vent appliance is constructed so that all the combustion air is supplied directly from and the products of combustion are vented directly to the outdoors by independent enclosed passageways connected directly to the appliance; or
    (b) a residential Category I, natural l draft boiler equipped with a draft hood with an input less than 300,000 Btu/hr, provided that:
        (i) it is a replacement boiler and is installed in the same location as the boiler being replaced;
        (ii) the boiler is installed in a room that is not normally occupied and that does not directly communicate with occupied areas (boiler room shall be isolated by means including but not limited to sealing the door(s) with weather stripping; joist spaces shall be closed off with an appropriate sealing method; the ceiling shall be covered with drywall including taping of all the seams);
        (iii) the boiler room door(s) shall be equipped with self-closing hardware and kept closed during boiler operation;
        (iv) combustion air is supplied from the outdoors to the space in which the boiler is located in accordance with clauses 8.2.4 and 8.3 of CSA-B149.1-25, Natural Gas and Propane Installation Code, regardless of building construction;
        (v) combustion air is supplied in accordance with the manufacturers certified instructions; and

(vi) a carbon monoxide alarm certified to CSA-6.19-17 is installed adjacent to or within each sleeping area in every suite of the home.

2. A new or replacement residential boiler with an input less than 300,000 Btu/hr that is not a direct vent type or a residential Category I natural draft boiler equipped with a draft control device may be installed provided that:

   (i) combustion air is supplied from the outdoors to the space in which the boiler is located in accordance with clause 8.2.4 and 8.3 of CSA-B149.1- 25 Natural Gas and Propane Installation Code, regardless of building construction;

   (ii) combustion air is supplied in accordance with the manufacturers certified instructions; and

   (iii) a carbon monoxide alarm certified to CSA-6.19-17 is installed adjacent to or within each sleeping area in every suite of the home.

7.1.13 Mandatory Safety Checks for Residential (one or two family Dwelling) Natural Draft Boilers Equipped with Draft Control Device 300,000 Btu/hr or less

7.1.12.1

During each heating season effective October 15th to April 30th when a certified G1, G2, G3 or GUT gas technician enters a residential building intended for one or two single families to carry out service, maintenance and/or emergency response work within the scope of his/her certificate, the gas technician shall:

1. Determine if a natural draft boiler equipped with a draft control device and with an input less than 300,000 Btu/hr is installed in the building. Where such a boiler is installed, the gas technician shall take the following steps unless a valid boiler inspection label as identified in paragraphs (e) and (f) is affixed to the boiler.

   (a) The gas technician shall provide the homeowner/user with the Owner/User with an Information Sheet (Annex “Q” Schedule A) that outlines the technician’s requirement to inspect and take corrective action where necessary and the homeowner’s responsibility to properly maintain their fuel burning equipment.

   (b) The gas technician shall take a CO reading in the flue gas upstream of the draft control device (between the heat exchanger and the draft control device) with the boiler operating at steady state under normal operating conditions.

   - If the CO reading exceeds 100 PPM, the boiler shall be considered an immediate hazard and the gas technician shall take immediate corrective action to address areas of concern including but not limited to cleaning of the boiler flue passages and cleaning the burner. If the boiler operation cannot be corrected so that the reading is below 100 PPM, the gas technician shall immediately shut off the fuel supply to the boiler, provide notice to the user and distributor and affix a notice to the boiler as required by sections 13(2)-(3) of Ontario Regulation 212/01 (Gaseous Fuels).

   (c) The gas technician shall visually inspect the boiler for safe operation. If there are signs of spillage (such as discoloration on the burner door or near the draft control device, or excessive moisture in the boiler room), a depressurization test as outlined in Annex “Q” Schedule C shall be performed.

   - If the test demonstrates that there is a depressurization issue, then the gas technician shall take appropriate action such as adding adequate combustion and make-up air.

- If there are signs of condensation due to excessively low return water temperatures, the gas technician take appropriate action such as installing a water bypass piping system in accordance with manufacturer's requirements or recommendations.

(d) A carbon monoxide alarm certified to CSA-6.19-17 shall be installed in accordance with the carbon monoxide alarm's installation instructions and located in the sleeping area or adjacent to each sleeping area in every suite of the home.

(e) If the boiler operation is satisfactory and found with a CO reading below 100 PPM, and the CO alarm(s) are installed, a boiler inspection tag (Annex "Q" Schedule "B") shall be affixed to the boiler.

(f) The boiler inspection tag affixed to the boiler shall expire on May 1st following the completion of this requirement.

(g) In the event that boiler is tested between May 1st and October 14th (the off-season) of a given year, it is considered a valid test for the period between October 15 of the given year and April 30th of the following year.

1.21 Clause 7.2.4.1 is revoked.

1.22 The title of clause 7.4 is changed to:

7.4 Type 2 clothes dryers

1.23 Clause 7.4 is amended by adding to it the following clause:

7.4.8
Type 2 clothes dryers shall be certified to ANSI Z21.5.2 / CSA 7.2 - Gas clothes dryers, volume II, type 2 clothes dryers

1.24 The title of clause 7.5 is changed to:

7.5 Type 1 clothes dryers

1.25 Clause 7.5 is amended by adding to it the following clause:

7.5.5
Type 1 clothes dryers shall be certified to ANSI Z21.5.1 / CSA 7.1 - Gas clothes dryers, volume I, type 1 clothes dryers

1.26 Clause 7.18.2 is revoked and the following substituted for it:

7.18.2
A construction heater shall be installed in accordance with the manufacturer's certified installation instructions.

1.27 Clause 7.27.1 is revoked and the following substituted for it:

7.27.1
A water heater, unless of the direct-vent type, shall not be installed in a bathroom, bedroom, or any enclosure where sleeping accommodation is provided.

A power vent water heater may be installed in an enclosure adjacent to and accessible from a bedroom or bathroom provided adequate combustion air per clause 8.2.6 is provided to the

enclosure. This combustion air supply shall not be supplied from the bedroom or bathroom.

A natural draft water heater may be installed in an enclosure that is accessed by a walk-through door which can be opened from a bathroom or bedroom, provided that the enclosure has a volume equal to or greater than the bathroom or bedroom**.**

1.28 Section 7.27 is amended by adding to it the following clause:

7.27.8
A water heater shall be installed:
a) If of the storage type, in a level manner on a firm and stable base sufficient to bear its expected in-service weight; and
b) if of the wall hung type, secured on a wall in a manner suitable to support its filled weight.

1.29 Clause 7.33.5 is revoked.

1.30 Section 7 is amended by adding to it the following clauses:

7.36 Field approval of special effects
Natural gas or propane used in connection with **Field Approval of Special Effects** shall comply with Section 5 of this Code Adoption Document.

7.37 Unvented heaters installed inside a building housing livestock or poultry

7.37.1
Unvented heaters installed inside a building housing livestock or poultry shall comply with the following requirements:
(a) infrared heaters of unvented type interlocked with ventilation system shall comply with clause 7.23.1;
(b) portable infrared heaters not interlocked with ventilation system shall comply with clause 7.23.2;
(c) infrared or other heaters of unvented type not interlocked with ventilation system shall comply with clause 7.37.2; and
(d) infrared or other heaters of vented type discharging flue gases inside the barn shall comply with clause 8.24.5.

7.37.2
Heaters of unvented type not interlocked with ventilation system shall be:
(a) exempt from clauses 7.23.1, 7.23.2 and 8.24.5;
(b) protected against physical damage;
(c) provided with mechanical or natural *ventilation* when the heaters are operating at a volume sufficient to maintain a minimum of 300cfm/100,000Btu/hr;
(d) located in a space where the maximum input of the appliances does not exceed 20 Btu/hr/ft^3 (0.2 kW/m^3) of the space in which the appliance is located;
(e) provided with combustion and ventilation air compatible with item (c);
(f) not be installed in a pedestrian exit passageway or stairway within 8 ft (2.5 m) measured horizontally from an exit door; and
(g) provided with clearance from combustible material as certified and indicated on the appliance.

Items (c) and (d) shall be verified by calculations, completed by a qualified PEO licence holder, and the calculations prominently displayed in the entrance area to

each building housing livestock or poultry.

7.37.3
A hose used to connect a moveable heater to its fuel supply shall be installed so that the hose does not come into contact with the heater's exterior surfaces.

1.31 Clause 8.3.7 is revoked and the following substituted for it:

8.3.7
An air-supply opening shall not be located within 3 ft (1 m) of a moisture exhaust duct. In the case of Type 1 gas clothes dryer, this separation shall be not less than 3 ft (1 m) and in the case of Type 2 gas clothes dryer not less than 10 ft (3 m).

Note: *A moisture-exhaust duct (e.g., a gas or electric clothes dryer discharge or spa exhaust) is considered to interfere with the combustion air intake when located within 3 ft (*1 m*) of the air intake.*

1.32 Clause 8.9.5 is amended to add the following at the end of existing clause:

This does not apply to direct vent appliances that are designed with short vent lengths intended to be concealed for decorative purposes.

1.33 Clause 8.12.2 is revoked and the following substituted:

8.12.2
Except as provided in Clause 8.21.6, before replacing or removing an existing appliance or connecting a vent connector to a chimney (while leaving one or more appliances still connected to the chimney), the chimney flue shall be examined to ascertain that the chimney:
(a) is properly constructed;
(b) is lined with a tile or metal liner;
- if installation of a liner is required it shall be completed within 5 days for residential applications and 30 days for commercial applications of replacing or removal of the existing appliance. The installer or agent undertaking the replacement, removal or connection of the new appliance shall:
  i. complete the installation of the liner, or
  ii. ensure the short-term safe continued use of the chimney and complete a documented follow-up to ensure that the chimney is lined within the applicable timeframe specified above and shall treat any failure to comply as an unacceptable condition in accordance with section 14 of O. Reg. 212/01.
- a tile liner is not acceptable for an exterior chimney; it shall be relined with a certified metal liner.

(c) is clear and free of soot, creosote, or obstructions;
(d) will effectively conduct the products of combustion outdoors; and
(e) is sized in accordance with Clause 8.13.

1.34 Clause 8.14.8(a) is revoked.

1.35 Clause 8.17 is amended by adding to it the following:

8.17.3 Existing B vent (not certified for exterior applications) which has been installed outdoors

8.17.3.1
Where a certificate-holder finds an installation of natural gas or propane fuel appliances that are vented using a B vent not certified for exterior applications and where the B vent constitutes an

unacceptable condition - no immediate hazard, the requirement for the unacceptable condition to be corrected within 90 days as required by section 14(1)(a) of the Gaseous Fuels Regulation is extended beyond 90 days for an indefinite period, provided that the following conditions are met:

(a) notification has been provided to the B vent owner/user by a qualified certificate holder that a B vent that is not certified for exterior applications has been installed outdoors (See Annex R, Page 1 & 2, User Owner Notification);

(b) notification that the B vent has been installed outdoors (initial only) has been provided to the fuel distributor within 14 days of discovery of the B vent, by a qualified certificate holder or registered contractor (See Annex R, Page 3, Fuel Distributor Notification);

(c) the B vent is in safe operating condition as determined by a qualified certificate holder;

(d) the qualified certificate holder has affixed a notice to the appliance or work describing the condition (See, See Annex R, Page 4, Equipment Tag);

(e) the B vent continues to be in safe operating condition as determined through annual inspections by a qualified certificate holder that are arranged by owner/user;

(f) the qualified certificate holder has affixed a notice to the appliance or work confirming that the annual inspection arranged by the owner/user have been satisfactorily completed (See Annex R, Page 4, Equipment Tag); and

(g) the fuel distributor sends annual notifications to the B vent owner/user regarding the annual inspection requirements (See Annex R Page 5, Annual Notification).

If conditions (a) through (g) are not met, the non-compliant B vent shall be replaced with a current code-compliant venting system in accordance with Ontario Regulation 212/01 section 14(1)(a). That is, the unacceptable condition – no immediate hazard must be corrected within 90 days.

8.17.3.2
Where a natural gas or propane fuel appliance that is vented using a non-compliant B vent described in clause 8.17.3.1 is replaced, removed, or a new appliance installed, the non-compliant B vent shall be replaced with a current code-compliant venting system.

8.17.3.3
For greater certainty, clause 8.17.3 does not apply where a non-compliant B vent constitutes an immediate hazard.

8.17.3.4
The determination of whether a vent is an unacceptable condition that constitutes an immediate hazard shall be made by a qualified certificate holder pursuant to sections 13(2) and 13(3) of the Gaseous Fuels Regulation, Ontario Regulation 212/01.

1.36 Sub items 8.18.12(a)(i) and (ii) are amended by adding “(see clause 7.13.4)” after the words “Floor Furnace”.

1.37 Subclause 8.32.2 (a) is revoked, and the following substituted for it:

a) The unlisted chimney conforms to NFPA 211; and

1.38 Annex C is adopted as normative (mandatory).

1.39 Clause C.2.16 is revoked and the following substituted for it:

C.2.16
For Single Appliance Venting Applications:
Where the vertical vent has a larger diameter than the vent connector, the vertical vent diameter shall be used to determine the minimum vent capacity and the vent connector diameter shall be used to determine the maximum vent capacity. The flow area of the vertical vent shall not exceed 7 times the flow area of the listed appliance categorized vent area, flue collar area, or draft hood outlet area unless designed with approved engineering methods.

For Multiple Appliances Venting Applications:
Where 2 or more appliances are connected to a vertical vent or chimney the flow area of the largest section of vertical vent or chimney shall not exceed 7 times the flow area of smallest listed appliance categorized vent area, flue collar area, or draft hood outlet area unless designed with approved engineering methods.

1.40 Annex G is adopted as normative (mandatory).

1.41 The following Annexes appended to this CAD are hereby adopted as part of CSA B149.1-25:

Annex P “Installation of Piping or Tubing in Rocky Areas”
Annex Q “Mandatory Safety Checks for Residential (one, or two-family dwelling) Natural Draft Boilers Equipped with a Draft Control Device 300,000 Btu/hr or less”
Annex R “Existing B-Vent (not certified for exterior applications) which has been installed outdoors”
Annex S “Mobile Food Service Equipment Sample Danger Labels & Annual Inspection Certificate”.

2.0 Field Approval of Fuel Appliances

2.1 Scope and Application

2.1.1
This section establishes the requirements for approval of appliances that are custom made, built on site or produced in limited numbers.

2.1.2
Approval under this section is limited to the fuel features of appliances/equipment where fuel features mean components that use fuel, handle fuel, control combustion or vent combustion products and features of construction and installation that relate to the safe use and handling of fuel.

2.1.3
Approval under this section is for code compliance and safety. It does not include performance of the appliance or equipment.

2.1.4
A TSSA Field Approval applies to the installation of the appliance, and, except for mobile or portable appliances, is valid only for the specific physical location where the appliance is installed. If the appliance or equipment is moved, even within the same physical address, the approval is void and the appliance must be re-approved in its new location.

2.1.5
If the appliance approved under this section is modified, the approval is void and the modified appliance must be re-approved.

Note: For further details, refer to the TSSA Advisory Maintenance vs. Modification and Upgrading, Ref. No. FS-133-08.

2.1.6
In the event of a conflict between this section and other codes and standards, this section shall prevail.

2.1.7
In the event of a conflict between this section and O. Reg. 212/10, the regulation shall prevail.

2.1.8
Where a deviation from this section is required, a separate application for a variance shall be made and approval of a variance shall be obtained prior to appliance approval.

2.2 Required Documentation

2.2.1
An application for field approval shall be made to the TSSA Statutory Director and shall include:

(a) Completed Application for Field Approval;
(b) Process description;
(c) Electrical schematic;
(d) Valve train diagram, combustion schematic or piping and instrumentation diagram (P&ID);
(e) Bill of materials for all fuel features; and

A prepayment in the amount as specified on the application for field approval, using one of the payment methods must be submitted with the application.

2.2.2
For Class A appliances, the following additional information shall be submitted:

(a) Safety ventilation calculation as per B149.3-25 clause 16.10; and
(b) Calculation for the explosion relief area

2.2.3
For appliances that use programmable controllers for flame safety, the following additional information shall be submitted:

(a) A letter from a Professional Engineer as defined by the Ontario Professional Engineers Act confirming the system has been reviewed by them and that it complies with section 12.7 of CSA B149.3-25, as amended in this CAD;
(b) Functional logic diagrams complete with timer and counter presets;
(c) Power distribution drawings;
(d) A list of all error and alarm messages, their meaning, and suggested operator reactions;
(e) A description of the microprocessor-based system and BMS operation;
(f) Training arrangements;
(g) Security procedures, privileges level, and assignments; and
(h) At the time of commissioning and site verification, an electronic copy of the as-built system program code.

2.2.4
Notwithstanding 2.2.1, 2.2.2 and 2.2.3, an applicant may be required to provide such other information or documentation as may be required by the Director or an inspector.

2.3 CSA B149.3 Code for the Field Approval of Fuel Related Components on Appliances and Equipment

The CSA-B149.3-2025 titled "Code for the Field Approval of Fuel Related Components on Appliances and Equipment" prepared by the Canadian Standards Association, is adopted with the following amendments:

2.3.1
Clause 1.2(g) is revoked, and the following is substituted for it:

(g) fuels not included under the TSS Act.

2.3.2
Clause 1.2 is amended by adding to it the following sub-clause:

(i) propane used as refrigerant.

2.3.3
Section 3 is amended by revoking the definitions of "**Appliance**", "**Approved**", and by adding the following definitions:

Appliance – as defined in the applicable regulation under the Technical Standards and Safety Act

Approved – as defined in the applicable regulation under the Technical Standards and Safety Act

Biogas— A gas that by the nature of the biological process produces primarily methane from the decomposition of organic waste material at a landfill site or under anaerobic conditions within digester.

Note: By the nature of the biological process under anaerobic conditions, its production and constituents are considered flammable, corrosive, wet, and potentially hazardous. It can contain traces of water, hydrogen sulphide gas, and dissolved ammonium and bicarbonate ions. By reason of its high inert content, biogas has a slow rate of flame propagation compared to natural gas and propane.

Where the term “biogas” is used, the requirements of this Code include, and apply equally to, any of the following gases or mixtures of them: wastewater digester gas, organic digester gas, and landfill gas:

Wastewater digester gas -a biogas produced in a digester from organic sewage sludge from a municipal wastewater treatment plant. It is generally composed of approximately one-half to two-thirds methane and one-third carbon dioxide that is produced from the decomposition of organic residues.
Organic digester gas- a biogas produced in a digester at a location other than a wastewater treatment plant. It is generally composed of approximately one-half to two-thirds methane and one-third carbon dioxide that is produced from the decomposition of organic residues.
Landfill gas - a biogas consisting primarily of methane, carbon dioxide, water, and traces of hydrogen sulphide gas from the decomposition of organic waste material at a landfill site.

Confined space – a space whose volume is less than 50 ft^3/1000 Btu/hr (4.8 m3/kW) of the aggregate input rating of all **appliances** installed in that space.

Lower Flammable Limit (LFL) - the lowest concentration of a flammable gas or vapour in air within which a flame can be propagated.

Operating Engineer - a holder of a subsisting certificate of qualification as an operating engineer under O. Reg. 219/01.

Pressure Controller - a combination of control **valve** and associated measuring, transmitting and controlling elements that maintains a constant outlet pressure at varying rates of flow.

Ventilation (with respect to the space in which an **appliance** is installed) - the removal of inside air, leaked or spilled products of combustion, or flue gases from the space in which an **appliance** is installed to outside the space, and the replacement of same by air from outside the space.

2.3.4
Clause 4.3 is revoked and replaced with the following:

4.3 A pressure regulator shall be of the spring-loaded, pressure-balanced type, or pressure controller type.

2.3.5
The following clauses are added:

4.10 The pressure regulator settings shall be protected from unauthorized access and adjustment.

4.11 The materials of construction of the pressure regulator shall be compatible with the anticipated operating conditions and fluids, and shall provide adequate protection from moisture, corrosion and components of the fuel gas.

4.12 The installation, operating and maintenance manuals for a pressure regulator shall be

provided to the end user and shall be available on site.

4.13 The flow direction shall be marked on the pressure regulator.

4.14 When a pressure controller type of regulator is used, a documented assessment shall be provided to demonstrate that there is appropriate evidence, based on proven-in-use, that the pressure regulator is suitable for the application.

2.3.6
Clause 8.2.3 is revoked and the following is substituted for it:

8.2.3 When a fuel air ratio control (FARC) system is used, it shall be in compliance with ISO 23552-1 or Annex D.

2.3.7
Clause 8.3.7 is revoked and the following is substituted for it:

8.3.7 Proven combustion airflow **and exhaust air** flow by mechanical means
When a burner combustion air supply or exhaust is provided by mechanical means, fuel shall be prevented from entering the burner until the mechanically produced sufficient airflow to the burner is proven by means of an airflow proving device as per Clauses 12.6 or 16.2.5. In the event of failure of airflow to the burner, fuel shall be shut off.

2.3.8
Clause 10.6.2 is revoked and the following is substituted for it:

10.6.2 An **appliance pressure regulator** shall be equipped
(a) for lighter-than-air gas, with a **bleed vent** leading outdoors in accordance with CSA B149.1 or into the **combustion chamber** adjacent to a continuous pilot, unless the **appliance pressure regulator** having an inlet pressure not in excess of 2 psig (14 kPa) is constructed or equipped with a leak-limiting system that restricts the escape of gas to not more than 2.5 ft^3 (0.0708 m^3) per hour of a gas having a specific gravity of 0.6 and the fuel contains no more than 7 mg of hydrogen sulphide per cubic metre of gas at an absolute pressure of 101.325 kPa at 15°C. A regulator with leak-limiting system shall only be installed in a ventilated space; or
(b) for heavier-than-air gas, with a **bleed vent** leading outdoors in accordance with CSA B149.2, unless the **appliance pressure regulator** having an inlet pressure not in excess of 2 psig (14 kPa) is constructed or equipped with a leak-limiting system that restricts the escape of gas to not more than 1 ft^3 (0.0283 m^3) per hour of a gas having a specific gravity of 1.53 and the fuel contains no more than 7 mg of hydrogen sulphide per cubic metre of gas at an absolute pressure of 101.325 kPa at 15 °C. A regulator with leak-limiting system shall not be installed in a **confined space**.

*Note: For the purposes of installation of **appliance pressure regulators** with a vent-limiting means, a ventilated space should not be considered a **confined space.***

2.3.9
Clause 10.6.10 is revoked and the following is substituted for it:

10.6.10 A safety limit or a safety relief device shall not be isolated, bypassed, or in any way made ineffective by a **valve** or other device except as permitted in Section 2.3.17 of this CAD.

2.3.10
Clause 12.1.3 is revoked and the following is substituted for it:

12.1.3 Except as specified in Clause 12.1.4, where intermediate relays are used in the limit circuit or used to control safety shut off valves or used to control direct spark transformer igniters, a safety relay that provides redundancy and a self-monitoring function to ensure the contacts are operating properly, or an equivalent circuit, shall be used.

2.3.11
Clause 12.2 is amended by adding the following:

12.2.5 For a single boiler venting into a dedicated venting system without any economizers or emission control devices, the purge shall be based on the volume of the internal flue passages up to the flue collar.

12.2.6 For appliances that rely on natural convection with no mechanical air supply, calculations shall be submitted taking into account various environmental conditions and any unburnt gas mixture that may have accumulated in the appliance, to have a pre-purge of at least four (4) air changes of the combustion zone and flue gas passages.
Where appliances that rely on natural convection and equipped with air damper(s) and/or draft damper(s) in control of air flow, interlocks shall be provided to make sure the dampers are proven in the fully open position during purge period.

2.3.12
Clause 12.4.1 is amended by adding to it the following sub-clause:

(h) high water in a steam boiler other than a boiler under continuous attendance by an operating engineer.

2.3.13
A new clause 12.4.5 is added to section 12.4:

12.4.5 The sensing element for the low water cut-off shall be located above the lowest safe permissible water level established by the boiler manufacturer.

2.3.14
Sub-clause 12.5.2(b) is revoked and the following is substituted for it:

(b) immediately upstream of the multifunctional control.

2.3.15
Clause 12.7.1 is revoked and the following is substituted for it:

12.7.1 General
When microprocessors are used as a primary safeguard device they shall be certified to IEC61508-2(hardware) and IEC61508-3(programming software) and installed as per the manufacturer's safety manual. The requirements of Clause 12.7.2 shall apply or a functional safety assessment shall be performed by competent personnel other than the designer, to verify full compliance with IEC 61511 standard. A letter from a Professional Engineer as defined by the Ontario Professional Engineers Act shall be provided confirming the system has been reviewed by him/her and that it complies with IEC 61511 standard.

Note: Programmable logic controllers (PLCs) and distributed control systems (DCSs) form pairs of a family of microprocessor-based burner management systems (BMSs) for diverse

2.3.16
Clause 12.7.2.2. is revoked and the following is substituted for it:

12.7.2.2.
The programmable logic controller and associated I/O shall be solely dedicated to the individual appliance and its associated process control and safety functions. The following requirements shall apply:

(a) The software program for the BMS shall reside in non-volatile memory.

(b) A watchdog timer internal to the BMS processor shall monitor the program scan time. In the event of an occurrence of a non-deterministic condition, all outputs shall de-energize, resulting in an immediate master fuel trip. The time allowed for a single processor scan shall not exceed three times the predefined scan time. An external watchdog timer shall not be required.

(c) In the event of a power failure, the programmable logic controller system hardware and software shall not prevent the system from reverting to a fire-safe condition. A safe condition shall be maintained upon restoration of power.

(d) The BMS shall be equipped with a master fuel trip function that shall directly de-energize the main burner and main igniter header safety trip valves and associated vent valves when a master fuel trip command caused by operator intervention or by any of the critical system processes or component failures are present; their operation shall result in a fire-safe condition. No logic sequence, or device, that allows momentary closing and subsequent inadvertent re-opening of the main or igniter fuel valves shall be permitted. Once a master fuel trip is initiated, it shall require operator action before operation of the affected burners can resume.

(e) Redundant processors with automatic transfer schemes shall be permitted. The designer shall be familiar with the conditions that would initiate a processor transfer and be fully satisfied that combustion safety is not compromised with the addition of redundancy hardware and/or the switching of processors.

(f) The designer of the BMS and the software for system operation shall provide the end user and the authority having jurisdiction with the documentation needed to verify that all related devices and safety logic are functional before the BMS is placed in operation. Passwords and/or entry level privileges shall be provided before access to the processor's memory shall be permitted. Inadvertent memory erasure shall be prevented by restricted access and high-level password-protected software. The system designer shall be responsible for the distribution of the BMS software program and may transfer the password for memory access to the end user when documentation control procedures are in place. The end user shall not make program alterations without written approval from the system designer or a qualified professional engineer in conjunction with the system designer. The end user shall keep the written approval on file until the equipment or appliance is decommissioned.

2.3.17
Clause 12.7.2.3.1 is revoked and the following is substituted for it:

12.7.2.3.1 Critical input signals are process parameters that activate a BMS master fuel trip and shall be configured in the fail-safe mode. Input channels for all critical signals shall incorporate a continuous self-test feature that satisfies the requirements of Clause 12.7.2.3.2 or 12.7.2.3.3, or they shall be hard-wired to the master fuel trip relay. Bypass switches for critical field inputs shall not be permitted. For petrochemical, refinery industries and integrated steel mills, the use of bypasses may be permitted by the authority having jurisdiction for the purposes of on-line testing or maintenance if the following is met:

1) Documented and approved mitigations are implemented during the override period; and

2) A strict time limit is enforced upon the bypass.

2.3.18
Clause 12.7.2.3.2 is revoked and the following is substituted for it:

12.7.2.3.2 All safety critical inputs shall be monitored for faults.
Example: The interrogation voltage to all critical field devices can be periodically removed. Upon detection of the fault, one of the following shall occur:

(a) For systems using a one out of one or a one out of two voting scheme, any safety input channel recognized as faulty shall be alarmed and a BMS trip shall be activated;
(b) For systems using a one out of two or a two out of two voting scheme with diagnostics, a single faulty input shall be alarmed and the system may default to one out of one voting scheme;
(c) For systems using a two out of two or a two out of three voting scheme, a channel recognized as faulty shall indicate a trip for that channel;
(d) For systems using a two out of three voting scheme with diagnostics, a single faulty input shall be alarmed and the system may default to a two out of two voting scheme;
(e) For systems using voting schemes other than listed above, the approval shall be obtained from the authority having jurisdiction.

2.3.19
Clause 12.7.2.3.3 is revoked and the following is substituted for it:

12.7.2.3.3 The design of the BMS communications to other non-safety microprocessor based systems, including operator stations, shall ensure that any failure of the communications shall not adversely affect the ability of the BMS to bring the process to a safe state. Signals from other non-safety microprocessor based systems that initiate a master fuel trip shall be hard-wired. BMS trips may be allowed over safety certified communications. When analog field devices are used for critical input signals, the following shall apply:

a) a faulted analog signal used as the primary process variable measurement shall initiate a master fuel trip or default to an approved safe condition;
b) a faulted analog signal used as a supporting signal to compensate and improve the accuracy of the primary measurement device shall initiate an alarm; and
c) digital signal variables from field devices, available using digital communication protocols (e.g., HART, Modbus), shall not be permitted as the primary signal to initiate a master fuel trip. These signals are permitted as a secondary trip function (e.g., to identify a faulted transmitter) or as an alarm function.

Notes:
1) A HART or Modbus are examples are digital communication protocols.
2) An example of a secondary trip function is to identify a faulted transmitter.

2.3.20
Clause 12.7.2.4 is revoked and the following is substituted for it:

12.7.2.4 All safety critical outputs shall be monitored for faults. Interposing relays shall only be used where the power demand exceeds the power rating of the output module or where the operating voltage for the field device is outside of the range offered by the output modules. Where interposing relays are used, the relay shall be sized to the voltage and current requirements of the equipment being controlled. Electronic output switches or dry relay contacts may be used in systems operating on AC voltages. They shall have a rating sufficient to control the application in both ON/OFF and continuous operations. Arc suppression devices can be used if necessary and shall be configured in a way to fail safe.

2.3.21
Clause 12.7.2.6 is revoked and the following is substituted for it:

12.7.2.6 Functional testing shall be performed and documented on the complete system. Functional testing shall include all aspects of the BMS, including the hard-wired tripping circuit, processor scan time, and I/O scan time. Where videographical display systems are involved in control selection and display, video response times shall be tested and recorded for all time-critical BMS safety functions.

2.3.22
Clause 14 is revoked and the following is substituted for it:

14. Rating Plate

14.1 An appliance shall have a clearly legible permanent rating plate that shall include the following information:
(a) manufacturer's or vendor's name;
(b) appliance type and identification number;
(c) electrical specifications;
(d) type of fuel(s);
(e) maximum input rating in Btu/hr (kW);
(f) minimum purge time;
(g) approval standard;

14.2 For gas fired appliances, in addition to information required in 14.1, the following shall be provided on the rating plate:
(a) inlet pressure at the point of connection;
(b) maximum burner manifold fuel pressure;
(c) minimum burner manifold fuel pressure, if applicable;

14.3 For fuel oil fired appliances, in addition to information required in 14.1, the following shall be provided on the rating plate:
(a) where applicable, minimum and maximum fuel oil nozzle pressure;
(b) where applicable, minimum and maximum atomizing media type and pressure;
(c) where applicable, nozzle sizes, angles and patterns;

14.4 For Class A appliances, in addition to the information required in 14.1, the following additional information shall be provided on the rating plate:
(a) Solvent used
(b) Solvent and volatiles entering the appliance (US Gals/Litres per batch or per hour)
(c) Maximum appliance operating temperature (^{o}F or ^{o}C)
(d) Exhaust blower capacity SCFM (m3/hr)
(e) CAUTION: This appliance is designed and approved for the above conditions. Prior to any change in the solvent type, solvent loading or oven operating temperature, recheck and document that the above exhaust capacity is sufficient to maintain appliance atmosphere at or below 25% LFL.

2.3.23
A new clause 16.10.12 is added:

16.10.12 Explosion relief

Explosion relief shall comply with clause 16.2.4 of CSA B149.3-25 except for the chamber of an indirect-fired oven that incorporates a single combustion airflow path through the heat exchanger and does not recirculate the products of combustion.

2.3.24
A new clause 16.11 is added:

16.11 Fume Incinerators and Oxidizers
Fume Incinerators and Oxidizers shall comply with Section 10 of NFPA 86-2023 excluding Clause 10.6.3.1.

2.3.25
A new clause 21 is added:

21 Boilers for use with waste gas

21.1 Boilers firing Biogas shall comply with both the CSA B149.6 Code for Biogas Generation and Utilization and CSA B149.3 Code for Field Approval of Fuel Burning Appliances and Equipment.

21.2 An appliance, including all accessories, components, equipment and material used shall be a type and rating approved for the biogas and waste gas composition and operating conditions.

21.3 Boilers for use with waste gas shall comply with the following additional requirements:

(a) A flash-back (flame) arrester and a check valve shall be installed downstream of the safety shut-off valve or valves on the waste gas valve train.
Note: The check valve is not required at the connection of a burner if the burner is so designed that it prevents the introduction of air, oxygen or other gas into the digester gas piping.
(b) For dual fuel fired boilers a check valve or equivalent shall be installed on the standby gas (secondary fuel) valve train immediately upstream of the standby gas (secondary fuel) connection to provide isolation for the standby (secondary fuel) valve train.
(c) When an automatic safety shut-off valve comes in contact with the waste gas, it shall be suitable for use with the waste gas. Suitability can be demonstrated via declaration from the valve manufacturer. The valve or valves shall be designed so that its invert does not allow accumulation of moisture.
(d) Boilers shall be equipped with a natural or propane gas pilot burner.
(e) Piping, tubing and fittings in contact with waste gas shall be made of stainless steel shall be made of materials that are suitable for the use with the waste gas.
(f) Components in contact with waste gas shall be suitable for use with waste gas. Suitability can be demonstrated via declaration from the component manufacturer.
(g) The pressure taps for the low and high gas pressure safety devices shall be located on the top of the pipe.

2.3.26
Annexes D and E are adopted as a mandatory part of the code.

2.3.27
Annex F is adopted as a mandatory part of the code.

2.3.27.1
Item f) of F.1 is revoked.

2.3.27.2
Item g) of F.1 is revoked and the following is substituted for it:

g). Safety shut-off valves shall not be used as modulating control valves unless they are designed as both safety shut-off and modulation valves and tested for concurrent use.

3.0 Mobile Food Service Equipment (MFSE)

Annex J (Mobile outdoor food service unit) of CSA B149.3-25 code, published by the Canadian Standards Association, is adopted as mandatory with the following amendments:

3.1 **Clause J.1** is revoked, and the following is substituted for it:

J.1 General

This section applies to mobile food service equipment commonly referred to as “food trucks or trailers” either open-air or enclosed type.

These requirements cover or make reference to the entire fuel features of the truck/trailer including:

a) the storage of fuel;

b) transmission of gas (piping/tubing);

c) burning of gas;

d) combustion air; and

e) exhaust air.

These requirements are not intended to approve individual appliances or components. The expectation is that all appliances and components used will be certified and suitable for the application.

3.2 The following clauses are added:

J.1.1 Approval

All MFSEs are required to have a Field Approval issued by TSSA or alternatively must be certified and labeled by a Certification Organization accredited by Standards Council of Canada. The approval must include the entire assembly cart, truck, trailer, etc., including the fuel supply assembly, piping, appliances, ventilation and warning labels.

J.1.2 Annual Inspections

The owner/operator of an MFSE shall ensure that a certified gas technician inspects the MFSE annually using the Annual Inspection Certificate in the form in Annex S of this CAD. Upon successful completion of the inspection the owner/operator shall retain the certificate with the MFSE until the subsequent inspection. All MFSE may be subject to TSSA inspection to confirm annual inspection is current.

3.3. **Clause J.2** is amended with the following:

The definition of **Mobile outdoor food service unit** is revoked and substituted with the following:

Mobile Food Service Equipment (MFSE): is mobile equipment containing propane or other hydrocarbon fuel fired cooking appliances, a means of water heating or power generation, and, if applicable, associated fuel storage.

For the purposes of this document, MFSE includes the following types of equipment (except as noted under Exemptions):

a. a self-propelled vehicle such as a truck or van fitted with food service equipment and either equipped with propane supply cylinders or intended for connection to propane supply cylinders at the operation site.

b. a trailer or cart fitted with food service equipment intended to be towed to the operation site and either equipped with propane supply cylinders or intended for connection to a propane

supply cylinder at the operation site.

c. a portable cart fitted with food service equipment that is not towed but may be transported to an operation site and provided with a propane supply cylinder that may be enclosed in the cart.

Exemptions:

In some cases, a self-propelled vehicle or a trailer may be located at a fixed site and is not intended to be relocated. Such units are not considered MFSE if they meet the following criteria:

1. Some form of municipal licence has been issued to permit operation in a permanent location only; or,
2. If there is no such licence in place, but the unit has been installed as follows:
    a. the vehicle has been fitted to a foundation or has been raised on concrete blocks, jack stands or equivalent;
    b. all wheels have been removed;
    c. tongues or tow bars have been removed; and,
    d. the vehicle is connected to one or more utility services:
        i) electricity - no plugs or generators and approved by the authority having jurisdiction;
        ii) water,
        iii) sewers or septic systems;
        iv) natural gas or propane if it is hard piped to a 420 lb cylinder or larger);

Notes:

1. If the vehicle attends various events at different locations such as fairs, rib festivals, etc. it will be considered a MFSE.

2. Units deemed to qualify under the exemptions above are nevertheless required to meet the applicable provisions of the CSA B149.1 Natural Gas and Propane Installation Code and CSA B149.2 Propane Storage and Handling Code.

3.4 **Clause J.3.6** is amended to add the following at the end of existing clause:

J.3.6.1

A cylinder valve shall be protected by

a) being set into a recess of a cylinder; or

b) a ventilated cap or collar that is a part of the cylinder.

3.5 **Clause J.3.8** is amended to add the following at the end of the existing clause:

J.3.8.1
A container located on the exterior of a vehicle shall

a) not project beyond the side of the vehicle;

b) not be installed on the roof of the vehicle unless accepted by the authority having jurisdiction;

c) if installed on the rear of the vehicle, be protected from damage by extending the bumper or frame rearward beyond the container, using material at least equivalent in strength;

d) not be mounted ahead of the front axle of a self-propelled vehicle;

e) when located on the A-frame of a vehicle designed to be towed, be mounted as close as possible to the body of the vehicle;

f) not be attached to any door; and

g) A container from which vapour only is to be withdrawn shall be installed or equipped in such a manner as to prevent the accidental withdrawal of liquid propane.

3.6 **Clause J.3.9** is revoked.

3.7 **Clause J.3.11** is amended to add the following at the end of the existing clause:

J.3.11.1
A cylinder shall be installed on a vehicle with the discharge from the cylinder relief valve not less than

a) 3 ft (1 m) on a horizontal plane from any building opening when the opening is below the level of the relief valve discharge.

b) 10 ft (3 m) on a horizontal plane from the air intake of any appliance or air-moving equipment; and

c) 0 ft (3 m) on a horizontal plane from any source of ignition.

Items (b) and (c) shall not apply to an appliance when the cylinder retention means is incorporated and certified as part of the appliance.

3.8 **Clause J.3.13** is amended to add the following at the end of the existing clause:

A container shall be located so that the discharge from the relief valve is

a) into the open air;

b) directed away from the vehicle; and

c) not less than 3 ft (1 m) horizontally from an opening into a vehicle, including combustion air inlets or flue gas outlets, below the level of such discharge.

3.9 **Clause J.3.25** is amended to add the following at the end of the existing clause:

A label made of durable material that is not adversely affected by water, employing an adhesive that is not water soluble, shall be affixed adjacent to the filling location.

The label shall be worded as follows:

“EQUIPPED WITH A STOP-FILL VALVE. USE OF FIXED-LIQUID-LEVEL GAUGE IS NOT REQUIRED”.

3.10 **Clause J.3.32** is amended to add the following at the end of the existing clause:

J.3.32.1
The tank manufacturer shall provide tank mounting brackets complete with a resilient material to be installed between the supports or clamping bands and a container such that there is no direct metal-to-metal contact with the container.

3.11 **Clause J.3.41** is amended to add the following at the end of the existing clause:

c) This minimum clearance shall be measured from the bottom of the tank or from the lowest portion of any part of the fuel system when installed, whichever is lower, and shall not be less than the following:
   i. between the axles
      1. 7 in (175 mm) on vehicles with a wheelbase of 127 in (3175 mm) or less; or
      2. 9 in (225 mm) on vehicles with a wheelbase in excess of 127 in (3175mm); or
   ii. behind the rear axle, 8 in (200 mm).

The tank or any other portion of the fuel system shall be installed above a plane that contacts the bottom of the rear tires, and the lowest most rearward part of the vehicle as received from the manufacturer.

3.12 **Clause J.3.50** is revoked with the following substituted for it:

All cylinders shall be secured by brackets, straps, or carriers designed and fabricated to withstand calculated loading in any direction equal to at least four times the weight of the cylinder when filled with propane. Non-metal straps must bear a manufacturer's label stating the load rating of the strap. Straps must be UV resistant as declared by the manufacturer.

3.13 **Clause J.4.1.2** is amended to add the following at the end of the existing clause:

J.4.1.2.1
Piping shall comply with ASTM A53/A53M or ASTM A106.

J.4.1.2.2
When an appliance is removed for servicing or repair, the supply line or branch line to that appliance shall be sealed by means of a cap or plug.

J.4.1.2.3
When piping or tubing is run in a sleeve, the sleeve shall be of such material and so installed as to protect the piping or tubing from damage and galvanic action.

J.4.1.2.4
When piping or tubing passes through an exterior wall, it shall be sealed watertight and the portion of piping or tubing that runs through the wall shall be sleeved or double wrapped with a waterproof wrap

3.14 **Clause J.4.1.3** is revoked, with the following substituted for it:

A fitting used with steel pipe shall be
a) either malleable iron or steel and shall comply with ANSI/ASME B16.3; or
b) certified to Standard ANSI LC-4/CSA 6.32.

3.15 **Clause J.4.1.7** is revoked.

3.16 **Clause J.4.1.8** is revoked.

3.17 **Clause J.4.1.9** is amended to include the following at the end of the existing clause:

Hose shall not be used in lieu of piping or tubing but may be used in conjunction with piping or

tubing.

3.18 **Clause J.4.1.10** amended to add the following at the end of the existing clause:

J.4.1.10.1

a) Piping, tubing, and hose shall be of sufficient size to provide a supply of gas to meet the requirements of volume and pressure at the point of use.
b) The piping or tubing system shall be designed to prevent the loss in pressure between the appliance and the last-stage regulator from exceeding 1 in w.c.
c) A hose connector rated at not less than 350 psig (2500 kPa) shall be provided between
    i) the cylinder valve outlet and the inlet of the regulator when the regulator is rigidly mounted on a support bracket; or
    ii) the regulator outlet and the main propane piping or tubing when the regulator is rigidly fixed to the cylinder valve outlet.
d) Propane piping and tubing located beneath a vehicle shall be securely fastened.
e) Propane piping or tubing shall be so located or protected as to prevent damage.

3.19 **Clause J.4.1.14** is revoked and the following is substituted for it:

All propane piping and tubing shall be supported by metal straps or hangers that have been galvanized or received equivalent protection. These supports shall be placed at intervals of not more than 4 ft (1.25 m), except where support is provided by the structure, and shall be anchored within 6 in (150 mm) of each end of the main propane line.

3.20 **Clause J.4.1.21** is amended to add the following at the end of the existing clause:

Connections within the vehicle are permitted for MFSE’s.

3.21 **Clause J.4.1.24** is amended to add the following at the end of the existing clause:

J.4.1.24.1

Where tubing passes directly through walls, floors ceilings, and partitions, it shall be protected by grommets that fit snugly in both the line and the hole through which the line passes. Grommets shall be securely held in position and prevent abrasion or damage to the line from vibration. Grommets shall be made of rubber, plastic, leather, or a similar material (not metal). They shall extend completely through the member. Silicone, butyl caulk, and similar materials with adhesive qualities may be used as or in addition to grommets if they encircle the tubing and will not become dislodged from the hole.

J.4.1.24.2

Accessible means shall be made in the supply line at the furthest point from the fuel supply to conduct load testing.

3.22 **Clause J.4.1.40** is revoked.

3.23 **Clause J.4.1.42** is revoked.

3.24 **Clause J.4.1.44** is revoked and the following is substituted for it:

The discharge from a regulator vent, line relief valve, or hydrostatic relief valve shall terminate outdoors and

a) be located not less than 3 ft (1 m) horizontally from any building opening that is below the level of such discharge and not beneath any building; and
b) not less than 10 ft (3 m) in any direction from air openings into a direct-vent appliance, a mechanical air intake, or a source of ignition (including electrical generators).

c) be directed to the outside of any enclosed space;
d) be located in such a manner as to prevent contact between propane and any tank or vehicle;
e) be directed upward or downward within 45 degrees of vertical;
f) have a rain cap or other protector, where required;
g) when discharging downwards, shall be provided with a protective screen; and
h) if on a vehicle carrying propane tanks or cylinders, the regulator relief vent terminations shall be vented below the lowest point of the MFSE body so as not to create accumulation.

3.25 **Clause J.4.2.4** is revoked with the following substituted for it:

Appliances may be connected to the gas supply with black iron or steel piping, CSST tubing, appliance connectors certified to CSA/ANSI Z21.24/CSA 6.10 or movable appliance connectors certified to ANSI Z21.69/CSA 6.16 according to the requirements of CSA B149.1.

3.26 **Clause J.4.2.5** is amended to add the following at the end of the existing clause:

Bleed vents on the equipment shall be in a downward position.

3.27 **Clause J.4.2.7** is revoked, and the following is substituted for it:

Tubing shall be
a) stainless steel tubing, 300 series;
b) brass tubing conforming with ASTM B135/B135M; or
c) rated for five times the design pressure of that location in the system.
d) Corrugated stainless steel tubing (CSST) and associated fittings shall comply with ANSI/LC 1/CSA 6.26 or CSA publication CGA Certification Laboratory Requirement LAB-009.
e) Corrugated stainless steel tubing (CSST) shall not be used as a gas connector.

3.28 **Clause J.4.2** is amended to add the following new clauses:
J.4.2.9
A regulator shall be installed on the vehicle in such a manner that its safe operation will not be impeded by weather conditions, and it shall be protected by a substantial metal or plastic hood of the enclosed style.

J.4.2.10
When provision is made for mounting a cylinder on the A-frame of a vehicle, a rigidly mounted support bracket for mounting the regulator shall be provided. The regulator shall be protected in accordance with Clause J.4.2.9.

3.29 **Clause J.5.1** is amended to add the following at the end of the existing clause:

Appliances shall be subjected to Field Approval if not certified to above standards.

An appliance shall have the clearances to combustibles where the temperature on adjacent combustible material shall not exceed:
i) 50°C (122°F) rise above ambient for any surface in contact or underneath the appliance; or
ii) 65°C (149°F) rise for all other surfaces.

3.30 **Clause J.5.3** is revoked and the following is substituted for it:

J.5.3
All appliances installed in a self-propelled vehicle or in a trailer or cart shall be mechanically

fastened to the vehicle, trailer or cart with a non-combustible restraining device. The retaining device shall prevent movement under normal operating conditions while stationary or in transport including rough roads or fields.

J.5.4
Every gas-fired heating appliance, water heater and refrigerator installed in a mobile food service truck or trailer vehicle shall be of the direct-vent appliance type or equivalent and shall be installed to provide complete separation of the combustion system from the atmosphere inside the vehicle.

3.31 **Clause J.7.1** is amended to add the following at the end of the existing clause:

When an exhaust system protected by an automatic fire-extinguishing system is installed over an appliance not provided with a flame safeguard, the operation of the fire-extinguishing system shall be interlocked with the gas supply to the appliance so as to automatically shut off the gas, including the pilot, to the appliance to be protected by the system and also to any other appliance that can be affected by the extinguishing system.

Applicants should contact fire safety officials to determine if their particular MFSE requires a fire extinguishing system.

3.32 **Clause J.7.2** is amended to include the following sub-clauses:

J.7.2.1
The valve used to shut off the gas supply referred to in clause J.7.2 shall be an automatic electrically operated fast closing valve:

i. of the manual reset type; or
ii. provided with a remote manual reset function.

The valve or remote reset device shall be identified as to its function and have permanent legible relighting instructions posted adjacent to it.
Note: When all the appliances in an MFSE incorporate safety shut-off devices that require the user to manually relight the appliance following loss of flame, a separate manual reset feature is not required.

J.7.2.2
The label required by clause J.7.2.1 shall as a minimum direct the user to turn off all burners prior to resetting the gas supply and to follow the appliance manufacturer's instructions for relighting.

For example:

MANUAL RESET FOR EXHAUST FLOW INTERLOCK VALVE
In the event of an exhaust flow failure, the gas supply to the appliances will shut off automatically and will require a manual reset.
Before resetting the gas supply –

- Turn all burner valves to the "OFF" position.
- Wait 5 minutes.
- Reset the gas supply by manually opening the interlock valve or by activating the manual reset switch.

Relight the appliances following the appliance manufacturer's instructions.

3.33 **Clause J.9** is revoked and substituted with the following:

The installation and operation manual for each appliance shall be supplied with and retained in the food truck.

3.34 **Clause J.10.1** is revoked and substituted with the following:

In addition to the appliance rating plate(s), each MFSE shall contain a general rating plate identifying all fuel burning equipment. The TSSA approval sticker shall be attached to this rating plate. The following information shall be included:

a) Appliance(s) Manufacturer's or vendor's name
b) Appliance type(s) and identification number
c) Vehicle Identification (V.I.N or License Plate Number)
d) Electrical specifications
e) Type of fuel(s)
f) Maximum input rating in Btu/hr (Each Appliance)
g) Inlet pressure at the point of connection
h) Maximum and minimum burner manifold fuel pressure
i) Clearances to combustibles (inches), if not on the appliance rating plate.

3.35 **Clause J.10.2** is revoked and substituted with the following:

Danger Labels
A readily visible danger label containing the following text shall be affixed to all MFSE, adjacent to the propane container:

DANGER

- Never use cooking appliances for space heating
- Ensure the supply tank valve is shut-off when appliances are not in use

BEFORE TURNING ON PROPANE:

- Make certain all propane connections are tight, all appliance valves have been turned off and any unconnected outlets are capped
- If an open door is used for ventilation/combustion air, ensure the door is open before turning on propane

AFTER TURNING ON THE PROPANE

- Light all pilots of appliances to be used
- Each connection, including those at appliances, regulators, and cylinders, should be leak tested initially and periodically with soapy water by the operator. Never use a lighted match or other flame when checking for leaks
- Shut off the propane supply immediately if any leaks are discovered; and
- Cap or plug the propane supply line if the propane tank is disconnected

For all Self-Propelled MFSE, the following additional danger label shall be affixed at the vehicle's fueling point and at the propane container with the following wording:

DANGER

- To avoid risk of death or serious injury, turn off all propane appliances, pilot lights and igniters during refueling the vehicle or refilling propane containers

The word "**DANGER**" shall be a minimum of ¼-inch (6.4 mm) in height. All other words on the label shall be a minimum 1/8-inch (3.2 mm) in height.

For Carts with Self-Contained Propane Supply System the following additional statement shall appear on the label.

- For Outdoor Use Only. If Stored Indoors, Detach Cylinder and Leave Outdoors.

3.36 **Clause J.10.3** is revoked.

3.37 The following additional clauses are added:

J.12 Special Provisions for Generators and Openings Proximate to Cylinders and Regulators

J.12.1
Notwithstanding any other code requirements, the discharge from a regulator vent, line relief valve, or hydrostatic relief valve on a MFSE may be located:

a) less than 3 ft (1 m) horizontally from any building opening that is below the level of such discharge and not beneath any building; and
b) less than 10 ft (3 m) in any direction from air openings into a direct-vent appliance, a mechanical air intake, or a source of ignition (which includes Generators);
provided that the following conditions are met:
   i. its associated cylinder will be isolated from the entrance door of the truck, and/or from the Generator by means of a metal shield extending from just above the top of the cylinder collar down to the cylinder platform and sealed to the wall of the truck,
   ii. its vents will be piped downward to below the door opening and/or generator and directed away from the vehicle, and
   iii. a label will be attached adjacent to each cylinder which reads:

DANGER
Propane Cylinder Relief Valves Must Be Directed Away from the Vehicle into Open Air.

Note: Notwithstanding clause J.3.49, when the “metal shielding” is part of a cabinet or recess, then it must have ventilation holes on the side opposite the entrance door and/or generator. The combined vent area shall not be less than 5 in2 (3000 mm2). Also, the vent of the regulator, line relief valve, or hydrostatic relief is to be piped down through the base of the cabinet, terminate under the vehicle, and be directed toward the side of the vehicle.

J.12.2
Notwithstanding any other code requirements, a cylinder may be installed outside on a MFSE, with the discharge from the cylinder relief valve less than

a) 3 ft (1 m) on a horizontal plane from any MFSE opening when the opening is below the level of the relief valve discharge;
b) 10 ft (3 m) on a horizontal plane from the air intake of any appliance or air-moving equipment; and
c) 10 ft (3 m) on a horizontal plane from any source of ignition (which includes Generators).

Items (b) and (c) shall not apply to an appliance provided that the following conditions are met:

   i. the cylinder will be isolated from the entrance door of the truck, and/or from the Generator by means of a metal shield extending from just above the top of the cylinder collar down to the cylinder platform and sealed to the wall of the truck,
   ii. its vents will be piped downward to below the door opening and/or generator and directed away from the vehicle, and
   iii. a label will be attached adjacent to each cylinder which reads:

DANGER
Propane Cylinder Relief Valves Must Be Directed Away from the Vehicle into Open Air.

Note: Notwithstanding clause J.3.49, when the “metal shielding” is part of a cabinet or recess, then it must have ventilation holes on the side opposite the entrance door and/or generator. The combined vent area shall not be less than 5 in2 (3000 mm2). Also, the vent of the regulator, line relief valve, or hydrostatic relief is to be piped down through the base of the cabinet, terminate

under the vehicle, and be directed toward the side of the vehicle.

J.12.3
Notwithstanding any other code requirements, a container may be located so that the discharge from the relief valve is less than 3 ft (1 m) horizontally from an opening into a vehicle, including combustion air inlets or flue gas outlets, below the level of such discharge;
provided that the following conditions are met:

i. its associated cylinder will be isolated from the entrance door of the truck, and/or from the Generator by means of a metal shield extending from just above the top of the cylinder collar down to the cylinder platform and sealed to the wall of the truck,
ii. its vents will be piped downward to below the door opening and/or generator and directed away from the vehicle, and
iii. a label will be attached adjacent to each cylinder which reads:

DANGER
Propane Cylinder Relief Valves Must Be Directed Away from the Vehicle into Open Air.

Note: Notwithstanding clause J.3.49, when the “metal shielding” is part of a cabinet or recess, then it must have ventilation holes on the side opposite the entrance door and/or generator. The combined vent area shall not be less than 5 in^2 (3000 mm^2). Also, the vent of the regulator, line relief valve, or hydrostatic relief is to be piped down through the base of the cabinet, terminate under the vehicle, and be directed toward the side of the vehicle.

3.38 The following additional clauses are added:

J.13 Portable Carts (with Self-Contained Propane Supply Systems)

1) A food service cart having more than two wheels shall have means to lock the cart in a stationary position.
2) Integral retention means shall be provided on a food service cart to limit the movement of the propane gas cylinder. With the cylinder installed per the manufacturer’s Instructions, lateral movement shall not exceed 1 in (25.4 mm) at the retention means, and the cylinder or any portion thereof shall not become dislodged from its retention means when a lateral force equal to the full weight of the cylinder is applied in any direction at the center of the vertical height of the cylinder. This test shall be conducted with the installed cylinder empty and full.
3) If the means is for attachment to the protective collar of the cylinder, it shall not interfere with the operation of the cylinder valve. Any movement shall not transmit strain to rigid tubing or pipe connections.
4) Retention means shall not depend on openings in either the cylinder’s protective collar or foot ring unless the appliance manufacturer specifies the following information:
    a. the cylinder manufacturer(s) identity (symbol, trade name, etc.) as marked on the cylinder.
    b. the marked cylinder water capacity or LPG capacity (in pounds) as stated by the cylinder manufacturer(s); and
    c. cylinder(s) that are to be approved for use with the appliance shall be provided by the appliance manufacturer for test.
5) Mounting and retention means shall incorporate adequate adjustments to accommodate the size cylinder specified by the manufacturer.
6) A food service cart for connection to a self-contained LP-gas supply system shall be equipped with a pressure regulator. The regulator shall comply with the Standard for Pressure Regulating Valves for LP Gas, ANSI/UL 144, as a part of the self-contained LP-gas supply system.
7) The regulator shall be installed in such a location that it will not attain a temperature above 130°F (54.4°C).

8) The regulator shall incorporate a pressure relief valve or overpressure device.
9) A food service cart with input ratings exceeding 100,000 Btu/h shall be equipped with a two-stage regulator.
10) The inlet of the pressure regulator for connection to a self-contained propane system shall be fitted for attachment to one of the following:
    a. A CGA No. 791 Cylinder Connection Device and complying with the Standard for Cylinder Connection Devices, ANSI Z21.81 • CSA 6.25 or the Standard for Adapters and Cylinder Connection Devices for Portable LP-Gas Cylinder Assemblies, UL2061;
    b. a CGA No. 810 Cylinder Connection Device and complying with the Standard for Cylinder Connection Devices, ANSI Z21.81 • CSA 6.25, or the Standard for Adapters and Cylinder Connection Devices for Portable LP-Gas Cylinder Assemblies, UL 2061; or
11) Except for a No. 600 Connection, connection devices shall:
    a. not permit the flow of gas until a positive gas seal has been achieved;
    b. have a thermal shut-off device complying with the Standard for Cylinder Connection Devices, ANSI Z21.81 • CSA 6.25, or the Standard for Adapters and Cylinder Connection Devices for Portable LP-Gas Cylinder Assemblies, UL 2061; and
    c. have an excess flow device complying with the Standard for Cylinder Connection Devices, ANSI Z21.81 • CSA 6.25, or the Standard for Adapters and Cylinder Connection Devices for Portable LP-Gas Cylinder Assemblies, UL 2061.
12) For appliances with a manufacturer's rated input of 80,000 Btu/hr (23 448 W) and below (with a 5 percent plus or minus tolerance), Class I excess flow device shall be used. For appliances with a manufacturer's rated input higher than 80,000 Btu/hr (23 448 W) (with a 5 percent plus or minus tolerance), Class II device may be used.
13) The by-pass flow rate after the device activates will be no greater than 10 scf/hr (0.28 m3/hr).
14) A cylinder connection device shall have its primary seal attached to the cylinder portion of the device.
15) The appliance side portion of a cylinder connection device shall not be capable of attachment to the cylinder portion of a Compressed Gas Association No. 510 Connection.
16) On food service carts for connection to a self-contained gas supply, provision shall be made between the supply cylinder regulator outlet and the main gas burner valve, by means of a flexible connection for expansion, contraction, jarring and vibration. Aluminum tubing shall not be used for this purpose.
17) Flexible connections, including hose, shall be as short as practicable, suitable for the purpose and the temperature to which exposed.
18) A food service cart shall be provided with a gas hose assembly complying with the current Standard, Elastomeric Composite Hose and Couplings for Conducting Propane and Natural Gas, CAN/CGA-8.1 or with the current Standard, Thermoplastic Hose and Hose Couplings for Conducting Propane and Natural Gas, CAN1-8.3.
19) Gas hose assemblies shall be of such length or otherwise restrained so that the regulator cannot drop to the ground when disconnected from the cylinder valve.
20) Provision shall be made so the hose cannot come into contact with surfaces whose temperatures are in excess of 140°F (60°C) when the gas appliances are in operation.
21) A cylinder valve's temperature shall not exceed 130°F (54.5°C).
22) The enclosure for the propane gas cylinder shall isolate the cylinder from the burner compartment to provide (1) shielding from radiation, (2) a flame barrier, and (3) protection from foreign material, such as hot drippings.
23) There shall be a minimum clearance of 2 in (50.8 mm) between the floor of the propane gas cylinder enclosure and the ground.
24) The design of a food service cart shall be such that (1) the propane gas cylinder can be connected, disconnected and the connections inspected and tested outside the cylinder enclosure; and (2) those connections which could be disturbed when installing the

cylinder in the enclosure can be leak tested inside the enclosure.

J.14 Generators

For MFSE which have a self-contained generator, a vapour tight separation between the generator and cooking appliance area is required. A door with a complete seal will suffice to meet this requirement.

4.0 Biogas Generation and Utilization

The National Standard of Canada B149.6-25 titled "Code for biogas generation and utilization" prepared by the Canadian Standards Association is adopted with the following amendments:

4.1 Clause 1.1.1 is revised to add the following at the end of existing clause:

This code applies to the storage, handling and use of biogas. TSSA does not review, assess or approve the performance of any appliances or equipment, the handling of any waste material or the passive ventilation of the gas.

4.2 Clause 1.1.3 is amended to add the following at the end of existing clause:

For applications above these pressures the requirements of high-pressure piping code TSSA-HPP shall apply.

4.3 Clause 1.1.8 is revoked with the following is substituted for it:

Renewable natural gas (RNG), a wastewater digester gas, organic digester gas, or landfill gas that has been upgraded, dried, or treated to meet the specifications of the receiving utilities, and thus considered “commercial grade or pipeline natural gas", is excluded from this Code.

4.4 Clause 3 is amended by

(a) adding the following definition:

Manual Shut-off valve – a manually operated valve in a gas piping system or a valve train for shutting off the fuel for maintenance, testing, and safety purposes.

(b) revoking the definition of the following term and substituting it with the following:

Testing firing (firing valve) – a quarter-turn manual shut-off valve that is located downstream of all safety shut-off valves on the valve train and as close to the burner as is practicable.

4.5 Clause 4.3.2 is amended to add the following at the end of existing clause:

In the province of Ontario, qualified personnel shall be certified by Technical Standards & Safety Authority.

4.6 Clause 6.2.1.1 is amended to add the following at the end of existing clause:

When open type blowers or compressors are installed outdoors, they shall be located at least 3 meters from any source of ignition or flammable vapors.

4.7 Clause 6.4.7.1 is revoked, and the following is substituted for it:

A flash-back (flame) arrester and thermal valve shall be installed at the flare stack upstream from and not more than 5 m (16.5 ft) from the burner.

4.8 Clause 8.1 is amended to include the following:

8.1 General
All above ground pipe and components located in an unheated space shall be protected from freezing where there is a potential for condensate to accumulate and freeze.

4.9 Clause 8.1.3.1 is revoked, and the following is substituted for it:

Organic digester gas piping shall
(a) take the most direct route or minimum route necessary to provide biogas cooling;
(b) contain as few elbows, drops, and risers as practicable;
(c) be of sufficient size to accommodate the maximum load requirements; and
(d) when installed, meet at least the following applicable to requirements, corrected to the appropriate calorific value and relative density:
    (i) in Canada: CSA B149.1; and
    (ii) in the United States: the AGA *International Fuel Gas Code* or NFPA 54/ANSI Z223.1.

4.10 Clause 8.6.1.7 is revoked, and the following is substituted for it:

Buried pipe shall not be installed with threaded fittings or flanges.

Note: This is a prohibited practice.

4.11 Clauses 8.6.2.5, 8.8, 8.8.1, 8.10.1, 9.8.3.4 and 10.2.2 are amended to use the term "**manual shut-off valve**" instead of "**manual valve**".

4.12 Clause 8.6.2.6 is added:

8.6.2.6
Buried pipe shall not be installed with threaded fittings or flanges on the positive pressure side of the system.

4.13 Clause 8.8.8 is revoked, and the following is substituted for it:

High-performance butterfly valves shall be approved in accordance with CSA 3.16 and shall be of full lug design or flanged ends.

4.14 Clause 8.9.6 is added:

8.9.6
Sumps that use pumps to remove condensate shall:

(a) use intrinsically safe electric pumps or compressed air operated pumps constructed to withstand the corrosive nature of condensate;

(b) be equipped with level controls;

(c) be designed to suit the pressure or vacuum conditions; and

(d) be accessible for maintenance.

4.15 Clause 9.6.1 amended to add the following at the end of existing clause:

For organic digester, in situations where liquid overflow is not practical, alternative methods to reliably control substrate level such as pumps and level transmitters may be used.

4.16 Sub-clause 9.7.1(b) is revoked and the following is substituted for it:

(b) piped in parallel, with a three-way manual change-over valve OR interlocking manual shut-off valves installed in the common supply piping, so that there shall be only one of the flash-back (flame) arresters and pressure/vacuum relief valves are always in service.

4.17 Clause 9.7.5 is revoked, and the following is substituted for it:

Except as noted in clause 9.7.1(b), shut-off valves, other shut-off devices, and closures and obstructions of any kind, with the exception of the flash-back (flame) arresters, shall not be installed in the gas connection between the biogas holding space and the digester excess gas pressure/vacuum relief valve.

4.18 Clause 10.3.7 is revoked, and the following is substituted for it:

10.3.7 Hazardous area electrical requirements:
All electrical apparatus and equipment installed in locations specified in Clause 10.3.1 shall be acceptable for use in hazardous locations, as defined in *Ontario Electrical Code, Part I.*

4.19 Annex D is adopted as a mandatory part of the code.

4.20 Clause D.2.3 is revoked, and the following is substituted for it:

D.2.3 Biogas pipe material
Pipe materials for biogas shall comply with Clauses 8.2 and 8.3.

4.21 Clause D.2.11.7 is revoked, and the following is substituted for it:

D.2.11.7 Manual *shut-off* valve approval
A manual *shut-off* valve not meeting the requirements of Clause 8.8.4 or 8.8.5 shall be approved and have the level of intended safety specified in CSA 3.11 or CSA 3.16
Note: See Annex *G for recommended requirements for manual valves to be approved for use.*

4.22 Clause D.2.11.9 is revoked and the following is substituted for it:

D 2.11.9 High performance butterfly Valve
High-performance butterfly valve should be:
a. approved in accordance with CSA 3.16, and
b. of full lug design or flanged ends.

4.23 Clause D.4.8 is revoked and following is substituted for it:

D.4.8 Automatic safety shut-off valve suitability
When an automatic safety shut-off valve comes in contact with the waste gas, it should be suitable for use with the waste gas *and certified to ANSI Z21.21/CSA 6.5.* Suitability may be demonstrated via declaration from the valve manufacturer. The valve or valves should be designed so that its invert does not allow accumulation of moisture.

4.24 Annex F is adopted as a mandatory part of the code.

4.25 Annex G is adopted as a mandatory part of the code.

4.3 Approval Process

4.3.1 Approval and Variance Requirements

4.3.1.1
TSSA approval is required for fuel handling systems at new facilities or at existing facilities where such facilities have been modified, upgraded or expanded. Systems installed prior to 2007 that have not been modified, upgraded or expanded do not require TSSA approval.

4.3.1.2
Approvals for appliances shall be obtained before the appliance is operated. Approval may be in the form of a certification or TSSA field approval.

4.3.1.3
Where a deviation from the requirements of this code is required, the party responsible must make a separate application for a variance to the Director. Unapproved equipment, appliances or piping cannot be operated until a variance is issued.

4.3.2 Required Documentation

4.3.2.1
An application for biogas approval shall be made to the TSSA and shall include:

(a) a completed application form;

(b) a description of the scope of work being conducted;

(c) engineering drawings;

(d) a list of fuel burning appliances;

(e) specifications for valves, controls and components; and

(f) a bill of materials

4.3.2.2
The Director or an inspector may require an applicant to provide additional information or documentation.

4.3.3 Site Verification and Testing

4.3.3.1
If requested by an inspector, the applicant/owner of the facility shall perform any tests deemed necessary by the inspector to verify that all equipment and appliances are working properly. The applicant/owner shall have the necessary test equipment available at the time of the test.

4.3.3.2
The inspector may require that a person with particular knowledge and/or familiarity with the facility and installation to be present during site verification and testing.

5.0 Field Approval of Flame Effects

The standard, NFPA 160, “Standard for the use of Flame Effects Before an Audience, 2021 Edition” is adopted for use in the province of Ontario with the following amendments:

5.1. Clause 1.1 is revoked and replaced with the following:

> This standard shall apply to temporary flame effects using propane, butane or natural gas as the fuel for entertainment, exhibition, demonstration, or simulation, including their design, fabrication, installation, testing, control, operation and maintenance.

5.2. Clause 1.3.2 is revoked, and the following is substituted for it:

> This standard shall apply to the following:
>
> i. Use of indoor and outdoor flame effects (see 3.3.13, Flame Effect)
>
> ii. Design, fabrication, installation, testing, control, operation, and maintenance of equipment, materials, procedures, and systems used to produce flame effects
>
> iii. Rehearsal, videotaping, audiotaping, or filming of any television, radio, or movie production if such production is before an audience and includes the use of flame effects
>
> iv. Rehearsal of any production incorporating flame effects intended to be presented before an audience
>
> v. Storage and holding at a venue where flammable and combustible materials are to be used to create flame effects
>
> vi. That portion or component of any hybrid flame effect that utilizes fuels, materials, devices, and methodologies governed by this standard

5.3. Clause 3.3 is amended by adding the following definition:

> **Deadperson switch.** A manually controlled system designed to automatically interrupt the fuel to the flame effect equipment.

5.4. Clause 5.1.2 is revoked.

5.5. Clause 7.10.1 is revoked, and the following is substituted for it:

> The flame effect performers, operators, and assistants shall be protected by clothing or other means suitable for their exposure to flame effects. Protective clothing requiring fire resistance shall be tested and demonstrated to be flame retardant, and documentation shall be furnished to the authority having jurisdiction upon request.

5.6. Clause 7.10.2 is revoked.

5.7. Clause 7 is amended by adding the following at the end of it:

7.12 Propane Cylinders

7.12.1
Propane cylinders shall be:

a. in an upright position on a firm footing and secured to prevent them from being accidentally tipped over;

b. a cylinder in use inside a building shall not be located near an exit, stairway, or an area normally used or intended for safe evacuation of people;

c. positioned so that the relief valve points away from any sources of ignition.

7.12.2
Inversion of propane cylinders to supply a propane effect is strictly prohibited.

7.12.3
When changing cylinders, clear the area within fifteen feet of the cylinder installation of all sources of ignition, use only the proper sized wrench for making connections.

7.12.4
Where liquid propane is used for a flame effect, all applicable requirements of the B149.2 “Propane storage and handling code” and the CSA-B149.3 “Code for the field approval of fuel-related components on appliances and equipment”, shall apply (both codes shall apply with Ontario amendments).

5.8. Clause 8.4 is revoked and the following substituted for it:

8.4
All flame effect operators shall have a valid Record of Training (R.O.T.) required for the use and handling of natural gas or propane construction heaters, or the necessary ROT for other type of equipment.

5.9. Clause 9.1.3.2 is revoked, and the following is substituted for it:

Any flame effect control systems that are disconnected from their power source or de-energized by means of a removable activator, keyswitch, or coded arming system shall not be permitted to be left unattended while connected to a fuel source.

5.10. Clause 9.3.2.5 is amended to add the following at end of existing clause:

9.3.2.5.1 System using Fuel Accumulators (Propane Cannons) for Film
Fuel Accumulators (propane cannons) used in flame effect systems shall meet the following requirements:

(a) An accumulator tank shall be designed, manufactured, and certified as an unfired pressure vessel with a minimum design pressure of not less than 250 psig.

(b) Unless otherwise approved, welding shall not be done to the shell, head, or any other part of an accumulator tank.

(c) Field welding of an accumulator tank shall be made only on saddle plates or brackets.

(d) An accumulator tank shall be equipped with a properly sized, spring loaded relief valve in accordance with section 10.2 of the Ontario Propane Code. The relief valve shall be set at a pressure not exceeding the pressure rating of the lowest rated component.

(e) A pressure gauge shall be provided with each accumulator tank.

(f) A quarter turn manual shut-off valve and a quick disconnect device shall be installed at the connection to the inlet of an accumulator tank. This valve shall remain closed until charging of the accumulator tank.

(g) The outlet of the accumulator tank shall be piped to the effect valve.

(h) Propane shall not be put into an accumulator tank until the air and moisture in the tank has been purged in accordance with the procedures described in Annex A, Section A-4, “Removal of Air and Moisture from Cylinders and Motor Fuel
Containers,” in the B149.2-20 “Propane storage and handling code”.

(i) An accumulator tank shall be charged as close to the time of the actual arming and firing of the effect as is practical.

(j) Where the fuel supply to an accumulator tank is not disconnected and removed after charging, the supply piping to the accumulator tank shall be equipped with the following:
    (i) A pressure regulator;
    (ii) A manual quarter turn shut-off valve;
    (iii) A pressure gauge;
    (iv) two automatic safety shut-off valves piped in series and wired in parallel through a deadperson switch; and
    (v) A high gas pressure switch with a setting no higher than 10% of the pressure intended for the accumulator tank.

(k) The complete system with all components and accessories in place shall be leak tested at the system operating pressure prior to use.

(l) Fuel accumulators shall have a written record of tests of flame effect size related to accumulator tank pressures and burner types (nozzles) including wind conditions and ignition types at the time of the tests. This written record shall be available upon the request of the authority having jurisdiction.

(m) The mixing of air or any other oxidizing media with fuel in an accumulator tank shall be prohibited. The mixing of an inert gas with fuel in an accumulator tank is permissible.

(n) Where an accumulator tank is used indoors, the products of combustion shall:
    (i) be effectively vented to the outdoors by a chimney, vent or continuously operating exhaust fan; or
    (ii) have the environment around the flame effect monitored for carbon monoxide levels. A carbon monoxide monitoring system shall be set to alarm at a level not greater than 25 ppm carbon monoxide. The flame

effect shall be discontinued until the level of carbon monoxide is reduced to below 25 ppm.

(o) Where an accumulator tank is used indoors, means shall be provided to purge gas from the volume of the space to which the flame effect is used:
  (i) at least four times of the entire volume and flue passages; or
  (ii) a combustible gas analyzer in conjunction with a purge system shall be used to confirm that gas has not accumulated beyond 25% of the lower explosive limit throughout the entire volume and ***flue*** passages.

(p) At least one portable dry chemical fire extinguisher of not less than 20-B,C rating shall be provided in a readily accessible location to the operator.

(q) Unless completely purged of propane, an accumulator tank shall not be used with any other product and shall be stored outdoors in accordance with section 6.5.2 of the B149.2-20 “Propane storage and handling code”. The person purging the accumulator tank shall be a holder of a Record-of-Training for filling cylinders.

(r) An accumulator tank may be stored indoors when completely purged of propane.

5.11. Clause 9.3 is amended to add the following clause at the end of it:

9.3.7 Fireplace Kits

Where the special effect is to simulate a flame in a fireplace, the following requirements shall apply.

(a) Where the flame effect is to be installed in an existing fireplace:
  i) the chimney/vent shall be inspected and adequate draft through the chimney/vent to exhaust combustion products shall be confirmed;
  ii) the fireplace enclosure shall comply with the Ontario Building Code or be certified by a recognized testing organization;
  iii) combustible materials shall be shielded from open flames by using fire-rated materials; and
  iv) except as specified in 7-3.2.6 (iv), a maximum capacity of 20 lbs. of propane for each fireplace kit may be used indoors;
  v) with multiple fireplace kit installations, an aggregate capacity of more than 100 lbs of propane connected for use shall not be used indoors.

(b) The burner and supports shall be made of non-combustible materials.

(c) At least one portable dry chemical fire extinguisher of a total not less than 20-B,C rating shall be provided in a readily accessible location to the operator.

(d) Piping or tubing shall not be exposed to high temperatures and flame impingement.

(e) The flame effect shall be controlled by a regulator and a quarter turn manual safety shut-off valve.

(f) Where the flame effect will continuously operate for longer than 10 minutes,

(i) an automatic safety shut-off valve controlled by a deadperson switch shall be installed in the fuel supply line to the burner; or

(ii) a quarter turn manual valve will be installed as an effect *valve* and another quarter turn manual valve controlling the fuel supply shall be installed at the fuel supply system. The fuel supply valve will be installed and controlled by a second operator and located not less than 10 feet from the effect valve and primary operator.

(g) Where a cylinder is used indoors with a capacity in excess of 1 lb. of propane,

(i) except as provided in (ii) an excess flow valve shall be installed. The excess flow valve shall be either integral with the cylinder valve or in the connection to the cylinder valve outlet. In either case, it shall be installed in such a manner that undue strain will not cause breakage between the cylinder and the valve.
(ii) A deadperson switch shall be installed with an automatic safety shut-off valve where an excess flow valve is not installed.

(h) Unless completely separated from the flame with a 2 hour fire rated shield, a cylinder shall not be located less than 10 feet from the flame effect.

(i) When a hose is used, it shall be inspected before connection, not exceed 75 feet in length and shall be protected, by location or other means, from impact and excessive heat.

(j) The operator shall remain in constant attendance at the safety shut-off valve during operation and have visual access to the flame effect at all times.

(k) During non-operation times, the operator shall close the quarter turn manual shut-off valve and the cylinder or fuel supply valve.

(l) Cylinder***s*** not in use shall be stored in accordance with the CSA 149.2 code.

9.3.8 Flame Bars and other Flame Effects.
Where the special effect is to simulate a flame the following shall apply.

(a) Where the input to the flame effect is less than 400 000 Btu/hr,
(i) The requirements of section 7.3.2.5 (fireplace kits) shall apply.
(ii) A pressure indicator shall be installed downstream of the regulator;
(iii) The estimated height of the flame for a specified pressure, burner and pipe/tube size shall be tested and documented prior to installation and operation;
(iv) It is permissible not to install an excess flow valve

provided an automatic shut-off valve controlled by a deadperson switch is installed.

(b) Where the input to the flame effect is 400 000 Btu/hr or greater,

(i) The system will be controlled by

- two automatic safety shut-off valves piped in series, wired in parallel and activated by a deadperson switch shall be installed or;
- a quarter turn manual *valve* will be installed as an effect valve and another quarter turn manual valve controlling the fuel supply will be installed at the fuel supply system. The fuel supply valve will be installed and manually controlled by a second operator and located not less than 10 feet from the effect valve and primary operator;

(ii) A pressure indicator shall be installed;

(iii) The estimated height of the flame for a specified pressure, burner and pipe/tube size shall be tested and documented prior to installation and operation;

(iv) The total capacity of cylinders used indoors and connected together shall not exceed 300 lbs. of propane and not more than one manifold of cylinders may be located in the same area unless separated by a distance of at least 50 feet;

(v) When a hose is used, it shall be inspected before connection, shall not exceed 75 feet in length and shall be protected, by location or other means from impact and heat;

(vi) The burner and supports shall be made of non-combustible materials;

(vii) Unless completely separated from the flame with a 2 hour fire rated shield, a cylinder shall not be located less than 10 feet from the flame effect; and

(viii) A cylinder shall not be exposed to temperatures in excess of 125^{o}F (50^{o}C).

(c) At least one portable dry chemical fire extinguisher of a total not less than 20-B,C rating shall be provided in a readily accessible location to the operator.

(d) Where a flame effect is used indoors, the products of combustion shall:

i) be effectively vented to the outdoors by a chimney, vent or continuously operating exhaust fan; or

ii) have the environment around the flame effect monitored for carbon monoxide levels. A carbon monoxide monitoring system shall be set to alarm at a level not greater than 25 ppm carbon monoxide. The flame effect shall be discontinued until the level of carbon monoxide is reduced below 25 ppm.

9.3.9

Where certified appliances are temporarily installed and used, all combustion

safety interlocks, combustion safeguards, excess temperature limits, pressure relief valves, lower water cut-outs, and other applicable safety controls shall be tested for proper operation prior to activating the appliance.

5.12. Clause 10.1.2 is revoked.

Note: Liquified flammable gas flame effects are not permitted.

5.13. Clause 12 is amended with the following addition:

Approvals under this clause are not permitted for use unless AHJ approval is granted.

5.14. Clause 13 is revoked, as it does not fall under TSSA jurisdiction.

5.15. Clause 14 is revoked, as it does not fall under TSSA jurisdiction.

5.16. Clause 15.2 is revoked, and substituted with the following:

Where flame effect systems use piping, such piping shall be pressure tested in accordance with the code under which they were fabricated.

5.17. Clause 16.1 is revoked and substituted with the following:

The wide range in size, arrangement, and location of flame effects covered by this standard shall preclude the inclusion of detailed fire protection provisions that are applicable to all flame effects. The provisions of this chapter shall be subject to verification or modification through analysis of local conditions.

6.0 Effective Date

This CAD amendment is effective on 1 June 2026.

Signed: 2 April 2026

Owen Kennedy
Director, Ontario Regulation 212/01 (Gaseous Fuels)
appointed under the Technical Standards and Safety Act, 2000

ANNEX P
Installation of Piping or Tubing in Rocky Areas

Where, due to rocky terrain, it is impractical to comply with section 6.15.4 (a), piping or tubing systems may be installed in accordance with this annex, the manufacturer's instructions and the authority having jurisdiction.

1. When piping or tubing cannot be buried a minimum of 15 inches due to rocky terrain, Type L polyethylene-coated copper tubing sleeved using high-density polyethylene tubing that contains a minimum 2% UV resistance by weight, may be used in accordance with this document and the Manufacturer's Instructions.
2. Tubing shall be installed without joints unless the required distance is beyond 100 ft. Tubing system shall be joined or connected in accordance with clause 6.15.3 and the sleeve shall be connected in accordance with the manufacturer's instructions.
3. Measures shall be taken to ensure that the pipe or tubing is protected from damage from vehicles, snow machines etc. (see clause 6.16.3)
4. Where ground cover is not possible,
   (a) Aboveground sections of the tubing sleeve shall be anchored to the contour of a secure rock surface at minimum 10 feet intervals. The sleeve shall be banded every 3 feet with a high visibility yellow tape
   (b) Piping shall follow the contour of the terrain without unsupported sections of pipe or tubing occurring above grade
5. PVC tubing sleeve to be sealed at each end to prevent the entrance of dirt and moisture.
6. A trench for underground sections of the tubing shall be in compliance with clause 6.15.5. The backfill, material shall be free of sharp objects, stones larger than 38 mm or any other material that may damage the piping or tubing.
7. Permanent Markers (yellow with black writing) shall be placed along the piping/tubing system every 10 ft. warning that the piping/tubing is part of a natural gas or propane system and when installed on rock, the signs shall be anchored to the rock.
8. Permanent Markers (yellow with black writing) to be placed at the natural gas meter or propane container and building or outdoor appliance warning of a shallow underground propane/natural gas piping or tubing system.
9. The markers referred to in 7 and 8 shall be of a height above the anticipated snow level for the area.
10. The PE material being used as protective sleeve shall conform to the standard CGSB 41-GP-25M "Pipe, Polyethylene, for the Transport of Liquids" and shall contain a minimum 2% content of carbon black additive, which gives the product essentially a 50 year life cycle for resistance to UV rays from the sun.

ANNEX Q

(Page 1)

Mandatory Safety Checks for Residential (one or two family dwelling) Natural Draft Boilers Equipped with a Draft Control Device 300,000 Btu/hr or less.

SCHEDULE A – OWNER/USER INFORMATION SHEET

345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel.: 416.734.3300
Fax: 416.231.1626
Toll Free: 1.877.682.8772

www.tssa.org

Mandatory Inspection of Gas (Natural Gas and Propane) Fired Natural Draft Boilers Equipped with a Draft Control Device

Attention Property Owner/User:

The Technical Standards and Safety Authority (TSSA) has the mandate to maintain and improve safety for Ontario residents in the fuels and other regulated sectors. TSSA is officially designated by Ontario's Ministry of Government and Consumer Services to administer and enforce the *Technical Standards and Safety Act, 2000*, which governs fuels safety in Ontario.

TSSA has determined that the use of natural gas and propane burning natural draft boilers equipped with a draft control device may result in a carbon monoxide (CO) safety hazard in the home, that may cause personal injury up to and including death.

CO is a colourless gas produced when fuels such as natural gas and propane burn incompletely. CO itself is odourless and tasteless but it may be accompanied by an abnormal odour of incomplete fuel combustion. Symptoms of CO poisoning include nausea and vomiting, dizziness, burning eyes, difficulty breathing, confusion and loss of consciousness.

Investigated CO incidents have shown that key contributing causes of the incidents are that:

- many boilers are not being maintained in accordance with the boiler manufacturer's instructions. It is imperative that boilers are cleaned properly on a regular basis to reduce the likelihood of CO production.
- chimneys intended to evacuate CO and smoke from the boilers to the outdoors, are not properly operating due to other exhaust systems (such as wood fireplaces, dryer exhausts, new kitchen exhausts, etc.) and the installation of new, more energy efficient windows and doors. These systems and home upgrades limit the outside air infiltration into the home and cause the house to depressurize.

To address this situation, TSSA is legally requiring that all heating contractors perform a CO safety check when a technician enters a home with a boiler. The technician is obligated to take action when an unsafe condition is identified. These checks will be required when a technician enters a home with this type of boiler regardless of whether the homeowner/user has requested service on that boiler. This check is only required once during the heating season. The gas technician is also required to visually examine the boiler and if there are signs of poor operation.

ANNEX Q (Page 2)

Mandatory Safety Checks for Residential (one or two family dwelling) Natural Draft Boilers Equipped with a Draft Control Device 300,000 Btu/hr or less.

SCHEDULE A – OWNER/USER INFORMATION SHEET

additional steps may be required including a home depressurization test or non-compliances corrected by adding combustion air, make-up air, installing a water bypass, etc.

TSSA is requiring that CO alarm(s) be located in the vicinity or within the sleeping quarters of the home. The technician is required to ensure that the alarm(s) is/are present. If alarms are missing, the technician is required to issue written notification that the alarms must to be installed. If the alarms are not installed within the notification time limit, the fuel supply to your home will be shut off.

As an equipment owner/user, TSSA and industry remind you of your responsibility to properly maintain and operate your boiler and all other fuels burning equipment. Annual maintenance, as a minimum, by a qualified contractor is the best method to fulfil this requirement.

If there are safety issues identified during this mandatory inspection, the boiler will need to be serviced and depending on what type of service is necessary, the cost will vary. To best ensure the continued safety of you and your family, we ask that you allow the technician's inspection/evaluation, and that you have your boiler maintained on a regular basis.

If you do not allow the inspection or non-compliances are identified such as no CO alarm(s) present, your boiler will be identified as requiring compliance within a specified time. If that time lapses and the inspection is not completed or non-compliances are not corrected, the fuel supply to your boiler or home will be shut-off. If there is an immediate hazard identified during the inspection that cannot be corrected, the fuel supply to the boiler will be immediately terminated.

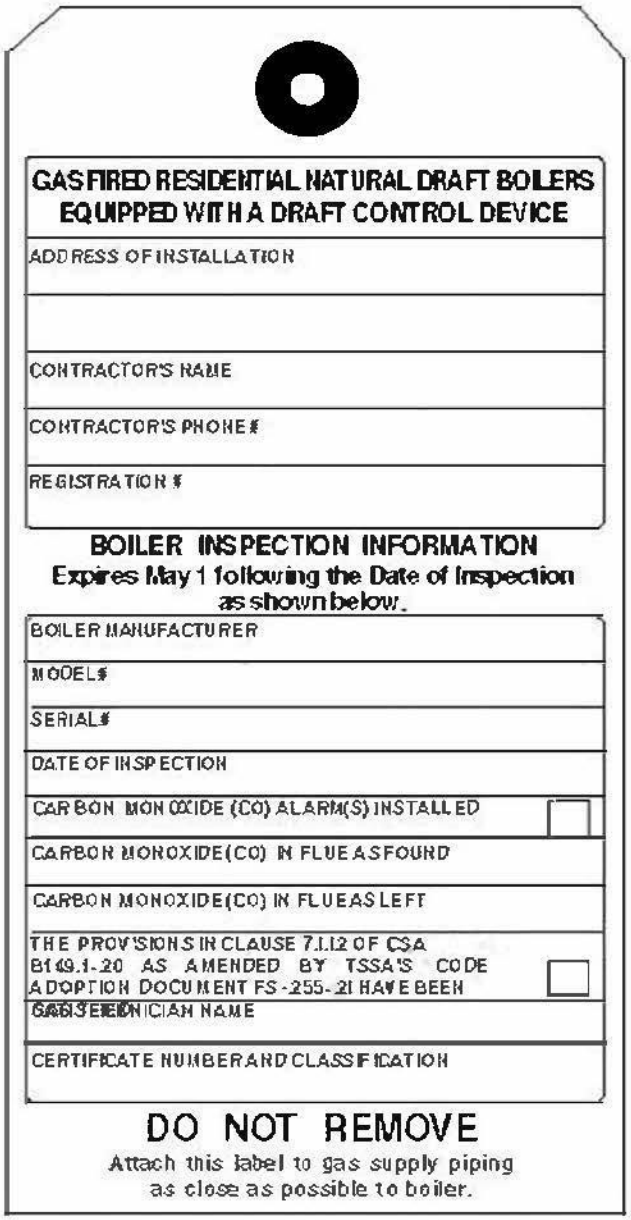
TSSA and the associated industries thank you in advance for your co-operation in this regard. If you require further clarification or have questions, please ask the gas technician performing the inspection, your fuel supplier or TSSA toll-free at 1-877-682-8772. Visit www.tssa.org for more information.

ANNEX Q (Page 3)

Mandatory Safety Checks for Residential (one or two family dwelling) Natural Draft Boilers Equipped with a Draft Control Device 300,000 Btu/hr or less.

SCHEDULE B – BOILER INSPECTION TAG

Please note that this Label shall be of similar construction as a Pressure Test Tag.



ANNEX Q (Page 4)

Mandatory Safety Checks for Residential (one or two family dwelling) Natural Draft Boilers Equipped with a Draft Control Device 300,000 Btu/hr or less.

SCHEDULE C – DEPRESSURIZATION TEST

345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel.: 416.734.3300
Fax: 416.231.1626
Toll Free: 1.877.682.8772

www.tssa.org

The following steps shall be followed for the depressurization test:

1. With the boiler and other appliances connected to the same common vent not in operation:
    a. Seal any unused openings in the common venting system;
    b. Visually inspect the venting system for proper size and horizontal pitch and determine there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition;
    c. Insofar as is practical, close all building doors and windows and all doors between the space in which the appliances remaining connected to the common venting system are located and other spaces of the building. Turn on clothes dryers and any appliance, including gas fireplaces, not connected to the common venting system. Turn on any exhaust fans, such as range hoods and bathroom exhausts, so they will operate at maximum speed. Do not operate a summer exhaust fan. Close fireplace dampers for solid fuel fireplaces.

2. Allow the exhaust equipment to operate for five minutes.

3. Place in operation the boiler being inspected. Follow the lighting instructions. Adjust thermostat so the boiler will operate continuously.

4. Test for spillage at the draft control device relief opening after 5 minutes of main burner operation.

5. After it has been determined that each appliance remaining connected to the common venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and any other gas burning appliance to their previous condition of use.

6. Any improper operation of the common venting system shall be corrected in a permanent manner.

ANNEX R
(Page 1)

Existing B-Vent (not certified for exterior applications) which has been installed outdoors

OWNER / USER NOTIFICATION

345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel.: 416.734.3300
Fax: 416.231.1626
Toll Free: 1.877.682.8772

www.tssa.org

Attention Property Owner/User:

The Technical Standards and Safety Authority (TSSA) is concerned that certain natural gas and propane burning appliances, such as furnaces and water heaters, are vented using B-Vents (not certified for exterior applications) which have been installed outdoors (See figures on page 2 for illustration). This application may pose a carbon monoxide (CO) safety hazard in the home due to extreme cold temperature conditions; as well, these vents may be subject to accelerated deterioration.

CO is a colourless, odourless, tasteless gas produced when fuels such as natural gas and propane burn incompletely. Symptoms of CO poisoning include nausea and vomiting, dizziness, burning eyes, difficulty breathing, confusion and loss of consciousness.

TSSA has the mandate to maintain and improve safety for Ontario citizens in the fuels and other regulated sectors. TSSA is officially designated by Ontario's Ministry of Government and Consumer Services to administer and enforce the *Technical Standards and Safety Act,* which governs fuels safety in Ontario.

Analysis of data regarding these outdoor B-Vent installations revealed that the likelihood of a safety hazard occurring is low; however, there is always the possibility of an incident occurring. With this information, TSSA has worked with industry to develop options for the owner/user who has a non-compliant B-Vent installed on the exterior wall of their premise.

These options are:

1. Replace the non-compliant B-Vent with a current code compliant venting system; or
2. Leave the non-compliant B-Vent in use provided:
    a. It is in safe operating condition as determined by a qualified certificate holder (gas technician)
    b. It continues to be in safe operating condition as determined through annual inspections by a qualified certificate holder (gas technician) arranged by the premise owner/user
    c. When a gas appliance is replaced, removed, or a new appliance installed, the non-compliant B-Vent shall be replaced with a current code compliant venting system.

TSSA and the associated industries thank you in advance for your co-operation in this regard. If you require further clarification or have questions, please ask the gas technician performing the inspection, your fuel supplier or TSSA toll-free at 1-877-682-8772. Visit www.tssa.org for more information.

ANNEX R (Page 2)

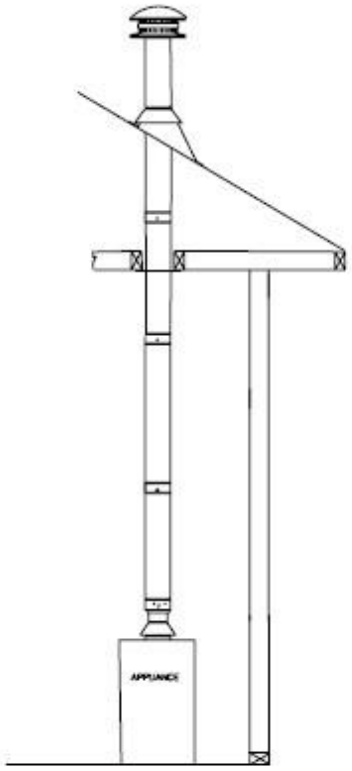
Existing B-Vent (not certified for exterior applications) which has been installed outdoors

OWNER/USER NOTIFICATION

345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel.: 416.734.3300
Fax: 416.231.1626
Toll Free: 1.877.682.8772

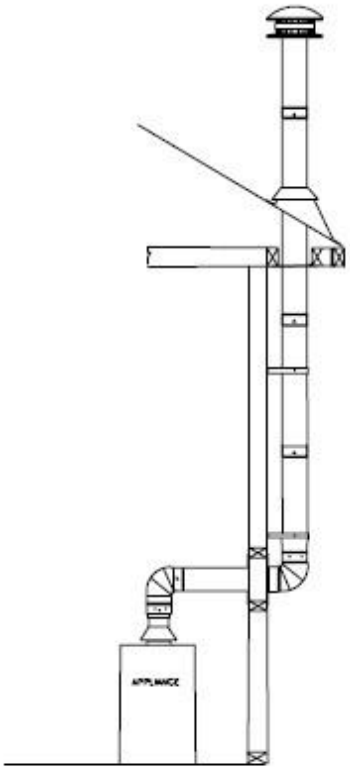
www.tssa.org

B–Vent not Certified for Exterior Application



Compliant Installation

Figure 1A



Non–Compliant Installation

Figure 1B

	ANNEX R, Page 3, Fuel Distributor Notification **Clause 8.17.3** **B-Vent (NOT Certified for Exterior Applications)** **Installed Outdoors**

A certificate holder is to supply notification to the fuel distributor within 14 days regarding the continued use of an existing B-Vent (not certified for exterior applications) which has been installed outdoors. This form is to be used for that notification and to document your inspection performed on the existing non-compliant venting system.

If owner/user is not available for you to inform of the situation or make a decision regarding their options, the option of leaving the existing venting system in use is not available.

Note: All blanks must be completed with the required information

To:	Name of Fuel Distributor *
Fax No.:	

From:	Certificate Holder Name		Certificate Holder No.
	Contractor Name	Contractor Telephone No.	Contractor Registration No.

Date of inspection/service: _____

B-Vent Owner/User Name: _____

Address: Street No._____, Street Name, _____Lot/Concession No.,

_____ P.O. Box_____City/Town _____ Province _____

Postal Code _____ Telephone No. _____

B-Vent Owner/User Name Signature*: _____

**Confirms Owner/User has been informed regarding this condition and has received the Information sheet (Clause 8.17.3)*

*** Notification for LEAVING an existing B-Vent (NOT Certified for Exterior Applications) which has been installed outdoors, in use.**

You must indicate by initialing that the following has been completed:

1. The existing B-Vent not certified for exterior application has been inspected & found to be in safe operating condition. _____
2. The Owner/User has been given the Information Sheet. _____
3. The Owner/User was informed of the options regarding the situation. _____
4. The Owner/User was informed that they shall arrange to have annual inspections on this venting system. _____

*** Notification for REPLACEMENT of an existing B-Vent (NOT Certified for Exterior Applications) which has been installed outdoors, with a Current Code Compliant Venting System**

Indicate by initialing that the following has been completed:

1. The existing B-Vent has been replaced with a current code compliant venting system _____

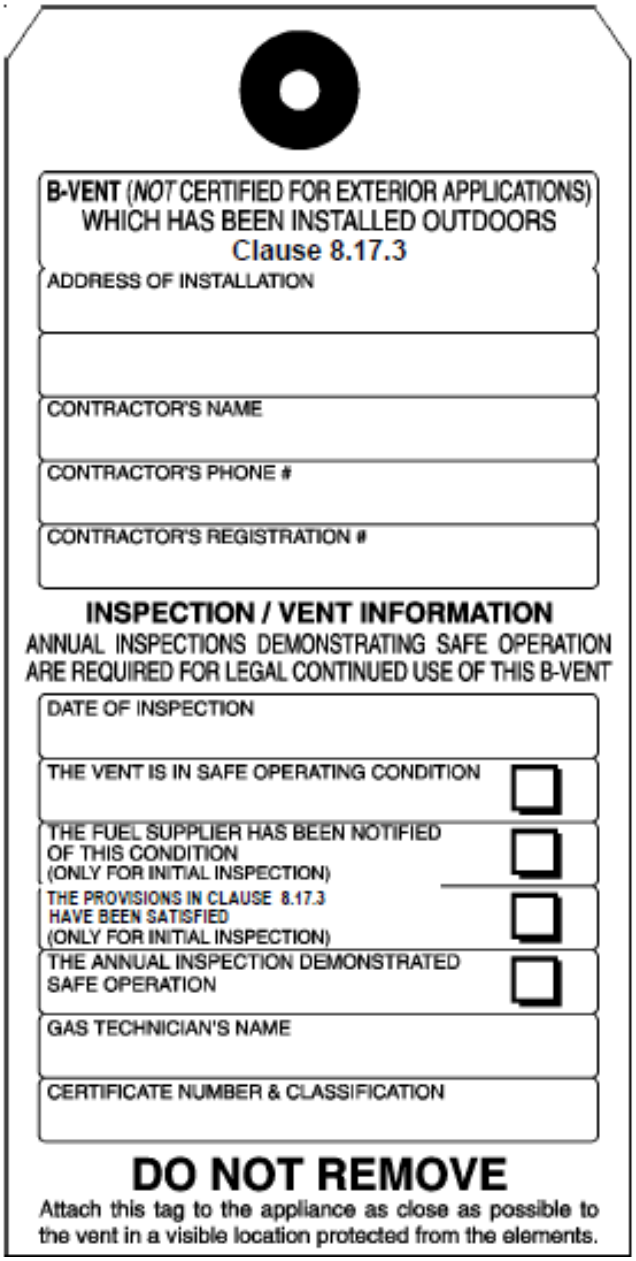
FS 09199(01/14)

ANNEX R (Page 4)

Existing B-Vent (not certified for exterior applications) which has been installed outdoors

EQUIPMENT TAG

Please note that this Tag shall be of similar construction as a Pressure Test Tag.



ANNEX R

(Page 5)

Existing B-Vent (not certified for exterior applications) which has been installed outdoors

SAFETY REMINDER

345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel.: 416.734.3300
Fax: 416.231.1626
Toll Free: 1.877.682.8772

www.tssa.org

Dear Name of Owner/User:

Your premise has an existing B-Vent (not certified for exterior applications) which has been installed outdoors.

Ontario Regulation 212/01, Clause 14 (1)(a) made under the Technical Standards and Safety Act requires that code non-compliances that do not pose an immediate hazard be corrected within 90 days. Many of these non-compliant venting systems were installed throughout Ontario and have operated safely for many years. In order to facilitate their continued safe use, a clause 8.17.3 was introduced allowing the existing B-Vent to be left in use with several provisions.

When this non-compliance was discovered, the owner/user of the premises at the time was given information sheet that had the following options:

1. Replace the existing B-Vent not certified for exterior applications with a current code compliant venting system, or

2. Leave the existing B-Vent not certified for exterior applications in use with the following provisions:
    a. It is in safe operating condition as determined by a qualified certificate holder (gas technician);

    b. It continues to be in safe operating condition as determined through annual inspections by a qualified certificate holder (gas technician) which are arranged by the premise owner/user;

    c. When a gas appliance is replaced, removed, or a new appliance installed, the non-compliant B-Vent shall be replaced with a current code compliant venting system.

Our records show that after inspection the existing B-Vent was left in use. You are required to have this B-Vent annually inspected by a heating contractor registered by TSSA to best ensure its continued safe operation. This notice is to remind you of this requirement. In the interest of safety, please have this inspection completed promptly.

Yours truly,
Fuel Distributor

ANNEX S

(Page 1)

	MOBILE FOOD SERVICE EQUIPMENT SAMPLE DANGER LABELS	**Document No: MFSE-001**
		Date: June 1, 2013
		Page: 1 **of** 1

The following danger labels shall be affixed to all MFSE, be readily visible and located adjacent to the propane container with the following wording:

DANGER
Cooking appliances shall not be used for space heating.
When the propane appliance is not in use or the vehicle is stored,
shut off the supply of propane to the appliance (at the propane tank).

BEFORE TURNING ON PROPANE
Make certain all propane connections are tight, all appliance valves
have been turned off and any unconnected outlets are capped
If an open door is used for ventilation/combustion air,
ensure the door is open before turning on propane

AFTER TURNING ON THE PROPANE
Light all pilots of appliances to be used.
Each connection, including those at appliances, regulators, and cylinders,
shall be leak tested initially and periodically with soapy water by the operator.
Never use a lighted match or other flame when checking for leaks.
Do not leave a system turned on or containers connected until the system
has been proven to be leak (propane) tight.
When the containers are disconnected, the propane supply line shall be capped or plugged.

For all MFSE that are part of a Self-propelled Vehicle, the following additional danger label shall be affixed at the vehicle's fuelling point and inside the driver's compartment with the following wording:

DANGER
All pilot lights shall be extinguished, and the supply of propane shut off
before refueling this vehicle.

For Carts with Self-Contained Propane Supply System the following additional statement shall appear on the label.

For Outdoor Use Only. If Stored Indoors, Detach and Leave Cylinder Outdoors

The word "**DANGER**" shall be a minimum of 1/4-inch (6.4 mm) in height. All other words on the label shall be a minimum 1/8-inch (3.2 mm) in height.

ANNEX S (Page 2)

	MOBILE FOOD SERVICE EQUIPMENT ANNUAL INSPECTION CERTIFICATE FOR MFSE'S	**Document No: MFSE-002** **Date: May 15, 2015** **Page: 1 of 1**

Equipment Identification (Licence Plate No. or V.I.N.) _____

Owner _____ Tel. No. _____

Address _____

FSD Label No. (If built after Feb. 13, 2006) _____

The following checklist is intended as a minimum. Additional tests may be necessary to ensure safe operation.

	Yes	No	N/A
Have the required DANGER labels been affixed			
If built after Feb. 13, 2006, is a TSSA FSD Label and MFSE rating plate in place			
If built prior to Feb. 13, 2006, is this unit eligible for grandfathering (not requiring field approval)			
Are the gas components (hoses, regulators, etc.) approved for the service			
Are the gas lines, fittings and hoses in good condition?			
Is the propane cylinder properly supported as per section 5.4, B149.5-20			
If the cylinder is in a cabinet, is it properly ventilated as per section 5.6, B149.5-20			
Is the cylinder / tank installed per section 5.5, B149.5-20			
Are the clearances to combustibles maintained			
Are the appliances in good working condition			
Is the equipment and all its components leak tight			
Are the supply pressures to the equipment and appliances set properly			
Do all the appliances ignite properly			
Does the owner/operator understand the operations and responsibilities outlined in the Danger labelling			
Are all automatic controls and limits functioning properly			

To pass all answers must be either YES or N/A

Certificate Holder's Name (Print)	TSSA Certificate Holder's No.	Date
Contractor's Business Name	Contractor's Business Tel. No.	TSSA Contractor's Reg. No

Re-Inspection Required 1 Year from the above date.
This Certification shall be kept available with the equipment covered at all times.
Additional information for the annual inspections and MFSE can be obtained at http://tssablog.org

Comments