



Fuels Safety Program	Ref. No.: FS-214-14 R1
ADVISORY	Date: December 16, 2015

Subject: **Extension of Compliance Date for Ventilation Calculations for Unvented Heaters in Livestock Facilities (B149.1-10, clause 7.36)**

Distribution: Posted on TSSA website and sent to Natural Gas RRG and Natural Gas and Propane Advisory Council, CPA, Ontario Pork, MGCS, Ontario Chicken, Egg Farmers of Ontario, Christian Farmers, Hatching Egg Producers, Ontario Federation of Agriculture, Turkey Farmers of Ontario, Ontario Beef, Veal Farmers and Goat Farmers, Dairy Farmers, Ontario Sheep.

This advisory supersedes and replaces FS-214-14 dated August 25, 2014. Changes from the original advisory are shown as red and underlined.

The most recent amendment to the Gaseous Fuels Code Adoption Document (FS-212-14, dated August 1, 2014, effective October 1, 2014) includes specific requirements for natural gas or propane heating appliances installed in livestock and poultry barns that vent their products of combustion into the barn space (clause 7.36).

A shortage of licenced holders who can design barn ventilation systems has made it difficult for owners of existing unvented heaters in livestock and poultry facilities to meet the January 1, 2016 deadline for compliance with clause 7.36.3. TSSA has therefore temporarily suspended enforcement of the January 1, 2016 deadline in clause 7.36.3 for existing heaters installed prior to October 1, 2014. TSSA will not enforce non-compliances with this particular code provision until the effective date of the next Gaseous Fuels Code Adoption Document. Fuel distributors and suppliers may continue to deliver fuel to such appliances.

These requirements include that the ventilation system designer (who must hold a licence issued by Professional Engineers Ontario, including licenced professional engineers, licenced engineering technologists and other limited licence holders, pursuant to the *Professional Engineers Act*) must verify the following two calculations and prominently display this information in the entrance area of each barn:

- 1) Minimum ventilation rate of the barn (mechanical or natural ventilation) when the heaters are operating is not less than 300 CFM / 100,000 BTUH (0.003 CFM/BTUH) of heaters input [clause 7.36.1(c)].
- 2) Maximum input of the heating appliances does not exceed 20 BTUH/FT³ of the space in which the appliance is located [clause 7.36.1(d)].

The calculations summary must show at minimum the following information:

- a) Barn address
- b) Barn ID
- c) Barn description
- d) Barn dimensions in feet
- e) Barn volume in cubic feet
- f) Description of heaters
- g) Heaters input in BTUH (total input of all heaters)

- h) Description of ventilation equipment
- i) Minimum ventilation rate in CFM
- j) Ratio of minimum ventilation rate to heaters input [shall not be less than 300 CFM / 100,000 BTUH (0.003 CFM/BTUH) as per clause 7.36.1(c)]
- k) Ratio of heaters input to barn volume [shall not exceed 20 BTUH/FT³ as per clause 7.36.1(d)].
- l) First/last name and company name of the professional engineer that verified ventilation calculations
- m) Date of verification

Notes:

- If additional unvented heaters are installed or removed the calculations required in items 1 & 2 must be updated to reflect the current status.
- All installed unvented heaters, whether operational or not must be included in the calculation.
- All heaters shall be approved.
- Attached are the following documents for your reference:
 - Ventilation Calculations Form
 - Ventilation Calculations Example

The Code Adoption Document specified in clause 7.36.3 that existing barn heaters (installed prior to October 1, 2014) must meet the above requirements by **January 1, 2016.**

7.36.3

Heaters installed prior to October 1, 2014 shall comply with section 7.36 by January 1, 2016 and are not required to comply with clauses 7.22.1, 7.22.2 and 8.24.5 and their predecessor clauses in prior codes relating to interlocking with the ventilation system or approval for indoor venting

Note that this extension of time for compliance with clause 7.36.3 only does not relieve appliance owners, operators or fuel distributors from compliance with any other provision of the Gaseous Fuels regulation, the Code Adoption Document or any adopted code, including provisions relating to the discovery of an appliance or work in an unacceptable condition (as defined by the regulation).

TSSA invites all stakeholders to submit their proposals related to code requirements for unvented heaters in livestock and poultry facilities by March 1, 2016. The proposals should be emailed to: mkulik@tssa.org.



VENTILATION CALCULATIONS - CLAUSE 7.36.1 (FORM)

- A) Barn address: _____
- B) Barn ID: _____
- C) Barn description: _____
- D) Barn dimensions: _____ ft x _____ ft x _____ ft (high)
- E) Barn volume: _____ ft³
- F) Description of heaters: _____

- G) Total heaters input in barn: _____ BTUH
- H) Description of ventilation equipment: _____

- I) Minimum ventilation rate: _____ CFM
- J) Ratio of minimum ventilation rate to heaters input (I/G) [min. 0.003 CFM/BTUH]: _____

- K) Ratio of heaters input to barn volume (G/E) [max. 20 BTUH/ft³]: _____

- L) Ventilation system verified by **PEO licence holder** (first/last name, company name): _____

- M) Date of verification: _____



VENTILATION CALCULATIONS - CLAUSE 7.36.1 (EXAMPLE)

- A) Barn address: 12345 Street Ave, Anytown
- B) Barn ID: Turkey barn#2
- C) Barn description: One storey brood/growoutbarn
- D) Barn dimensions: 50 ft x 300 ft x 8.5 ft (high)
- E) Barn volume: 127,500 ft³
- F) Description of heaters:
7 Radiant Tube heaters @ 100,000 BTUH each
- G) Total heaters input in barn: 700,000 BTUH
- H) Description of ventilation equipment:
3 - 24 inch variable speed fans – Model XXY operating at 0.10 inch static pressure at 40% of BESS test
- I) Minimum ventilation rate : 3600 CFM
- J) Ratio of minimum ventilation rate to heaters input (I/G) [min. 0.003 CFM/BTUH]:
3600 CFM / 700,000 BTUH = 0.00514 (more than 0.003 CFM/BTUH)
- K) Ratio of heaters input to barn volume (G/E) [max. 20 BTUH/ft³]:
700,000 / 127,500 = 5.5 (less than 20 BTUH/ft³)
- L) Ventilation system verified by **PEO licence holder** (first/last name, company name):
John Smith, P.Eng, ABC Ventilation Inc.
- M) Date of verification: August 20, 2014