

SOLID FUEL  
APPLIANCE  
INSTALLATIONS  
& CODE  
OFFICIAL

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Welcome!





A man wearing a dark hat and a dark jacket is standing outdoors. The background consists of green trees and a dark, textured wall. The text "WETT INSTRUCTOR" is overlaid in white, bold, sans-serif font across the center of the image.

WETT INSTRUCTOR

# LEARNING OBJECTIVES

- Wood burning appliances
- Factory built fireplace
- What to look for in your inspections

# APPLIANCE

Why a solid fuel burning appliance?

A warm, cozy scene with a fire in the background and hands holding white mugs in the foreground. The fire is bright and glowing, casting a warm light on the scene. The hands are holding white mugs, and the overall atmosphere is intimate and comforting. The text "AMBIANCE" is overlaid in the center of the image.

AMBIANCE

A wood-burning stove with a fire inside, set against a stone fireplace wall. The stove is black and has a glass door showing the fire. The fireplace is made of large, irregular stones. The word "WARMTH" is overlaid in white text on the left side of the stove.

WARMTH

A man and a woman are sitting on a stone fireplace hearth, smiling and talking. The woman is holding a white mug. A fire is burning in the fireplace behind them. The scene is dimly lit, with the fire providing the main light source. The word "CONVERSATION" is overlaid in white text across the center of the image.

# CONVERSATION



A wood-burning stove is positioned in front of a stone fireplace. The fireplace is constructed from large, irregularly shaped stones. The stove has a dark, arched opening with a fire burning inside, casting a warm glow. The scene is dimly lit, with the primary light source being the fire in the stove. The overall atmosphere is cozy and intimate.

“In intercourse at hearth or board”

– Horatius Bonar

Speaking of family conversation around the  
fireplace

A wood-burning stove with a fire inside, set against a stone fireplace wall. The stove is black and has a glass door showing the fire. The fireplace is made of grey stone. The background is a stone wall with a pattern of grey and white. The foreground is a wooden floor.

“Some of the best conversations I've had are sitting around a camp fire. ”

– Robyn Davidson

Made famous for her book *Tracks* about her 1700 mile track across the desert of west Australia.

# WOOD BURNING APPLIANCES

# SPACE HEATER

- “An appliance for heating the room or space within which it is located, without the use of ducts.” – WETT Manual

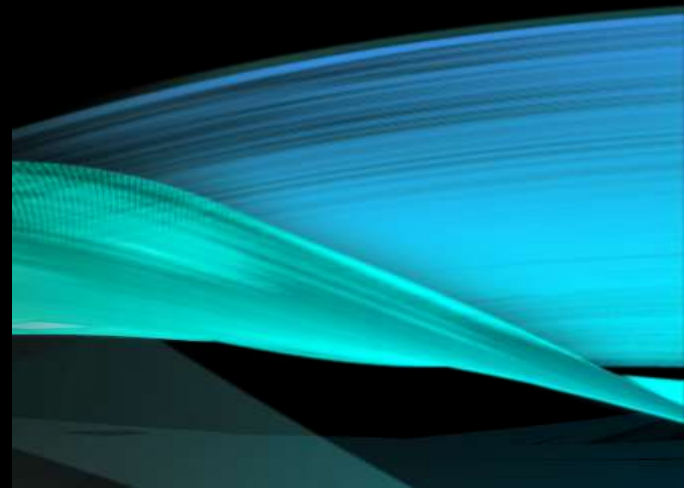
# SPACE HEATER

- Wood Stove
- Cook Stove
- Pellet Stove
- Fireplace (Masonry or Factory Built)
- Fireplace Inserts & Hearth Mount Stoves
- Masonry Heaters



Certified to ULC S627

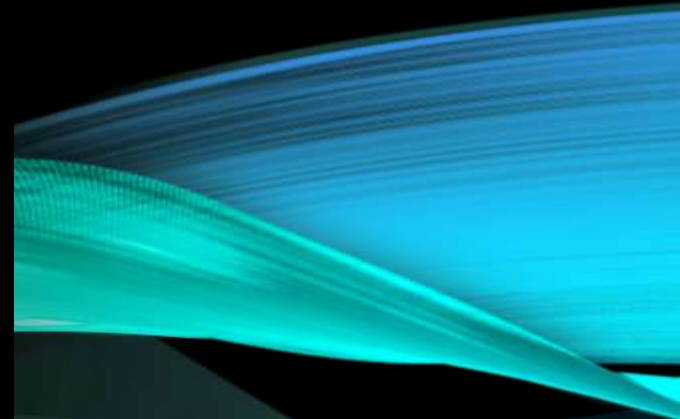
WOOD  
STOVES



Certified to ULC S627



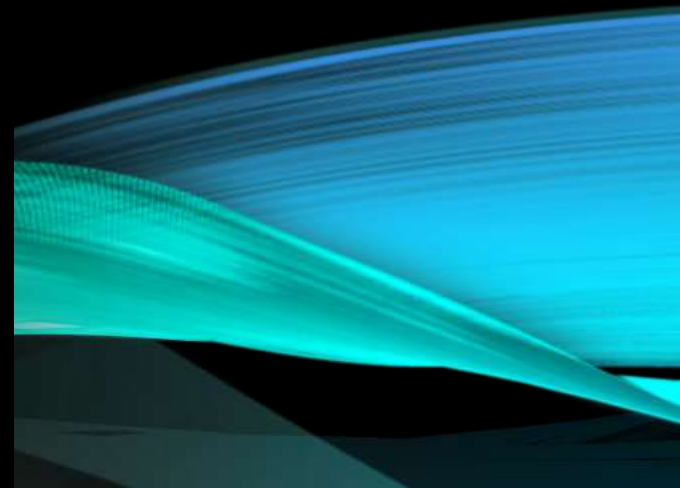
# RADIANT WOOD STOVE





Certified to ULC S627

# RADIANT WOOD STOVE

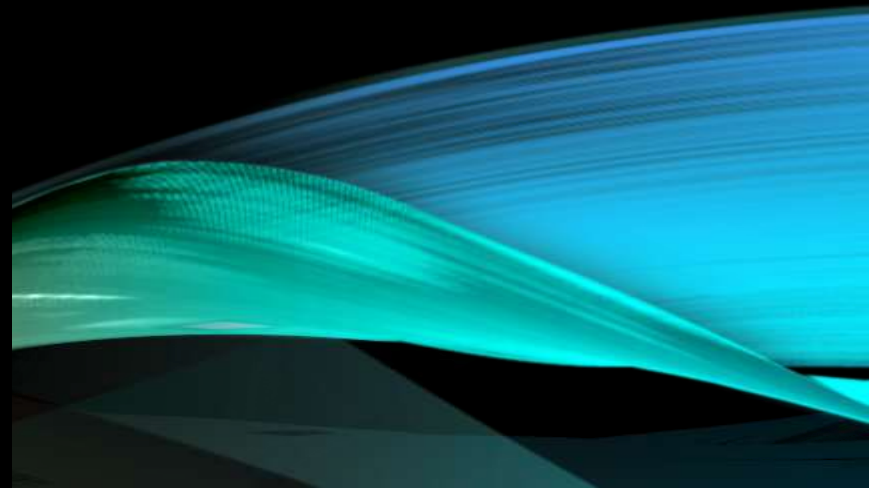




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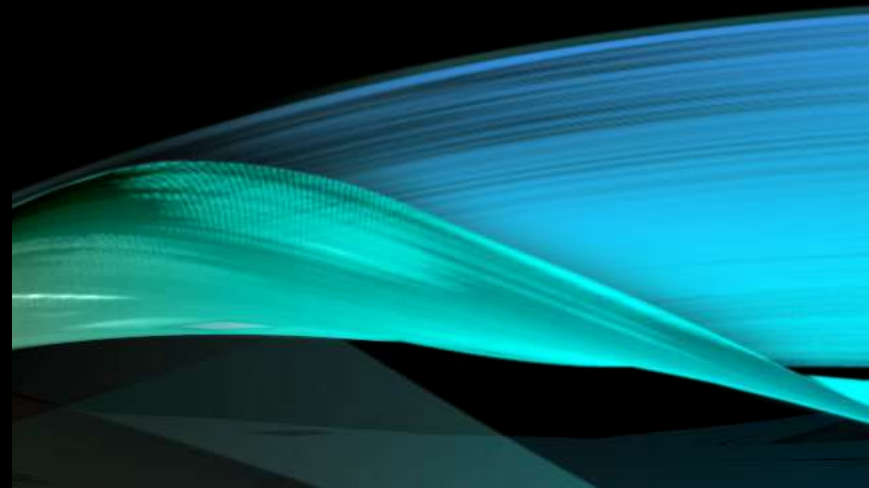
# CONVECTION SPACE HEATER (WOOD STOVE)

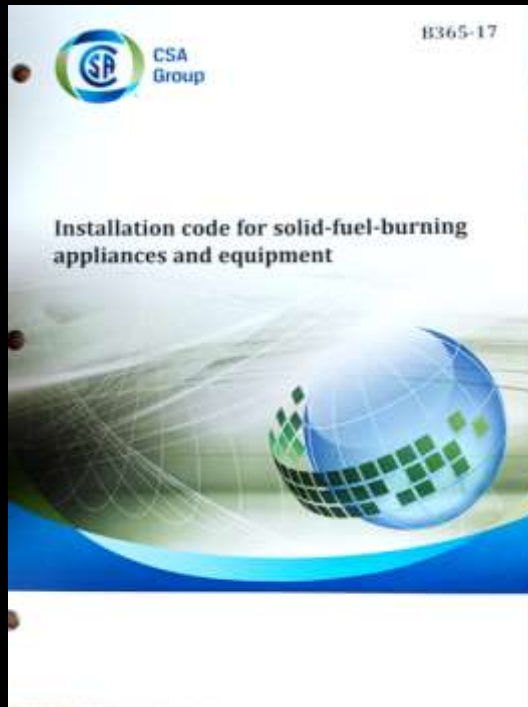


Certified to ULC S627



# CONVECTION RADIANT STOVE





# CSA B365-17

# CSA B365-17

- 8.1.3.2.
- Any combustible covering beneath the appliance and/or within the area extending horizontally at least 450 mm (18") beyond the appliance on any side equipped with a door, and at least 200 mm (8") beyond the appliance on other sides, shall be protected by a continuous, durable, noncombustible pad that will provide ember protection.

# AIR TIGHT WOOD STOVE



# UNCERTIFIED STOVE



# RANGE ULC S627



# PELLET STOVE



Certified to ULC S627





# FIREPLACE INSERT & HEARTH MOUNTED STOVE

Certified to ULC S628  
9.22.10.1 – 9.22.10.2





# MASONRY HEATER

# CHIMNEYS

- Factory Built
  - Certified to;
    - ULC S604
    - ULC S610
    - ULC S629
- Masonry Chimneys
  - Requirements Found in Building Code

# FACTORY BUILT CHIMNEY

Certified To ULC S629



# FACTORY BUILT CHIMNEY



Certified To ULC S610

# Factory Built Chimney

CERTIFIED TO ULC S604



National Building  
Code 9.21

# MASONRY CHIMNEY



# SINGLE WALLED FLUE PIPE



Requirements  
Found In CSA  
B365 Section 6.4





# CERTIFIED DOUBLE WALLED FLUE PIPE ULC 641





CERTIFIED DOUBLE  
WALLED FLUE PIPE

Vented

ULC S641



CERTIFIED  
DOUBLE WALLED  
FLUE PIPE

Non-Vented

ULC  
S641

# FACTORY BUILT FIREPLACE



CONNECTED









A dimly lit living room during Christmas. A large, decorated Christmas tree stands on the right, adorned with white lights, red ribbons, and gold ornaments. A woman and a young child are gathered around the base of the tree. In the background, a fireplace with a stone surround contains a warm fire. The room is decorated with stockings hanging from the ceiling and framed pictures on the walls. A large potted plant sits on a table to the right of the tree. The overall atmosphere is cozy and festive.

AMBIANCE

A wood-burning stove with a fire inside, set against a stone fireplace wall. The stove is black and has a glass door showing the fire. The fireplace is made of large, irregular stones. The word "WARMTH" is overlaid in white text on the left side of the stove.

WARMTH

A man and a woman are sitting on a stone ledge in front of a fireplace. The woman is on the left, wearing a white sweater and holding a white mug, smiling at the man. The man is on the right, wearing a light-colored shirt and dark pants, also smiling and looking at the woman. The fireplace has a fire burning inside. The background is a stone wall. The word "CONVERSATION" is overlaid in white capital letters across the center of the image.

# CONVERSATION



WHAT DID WE MISS?





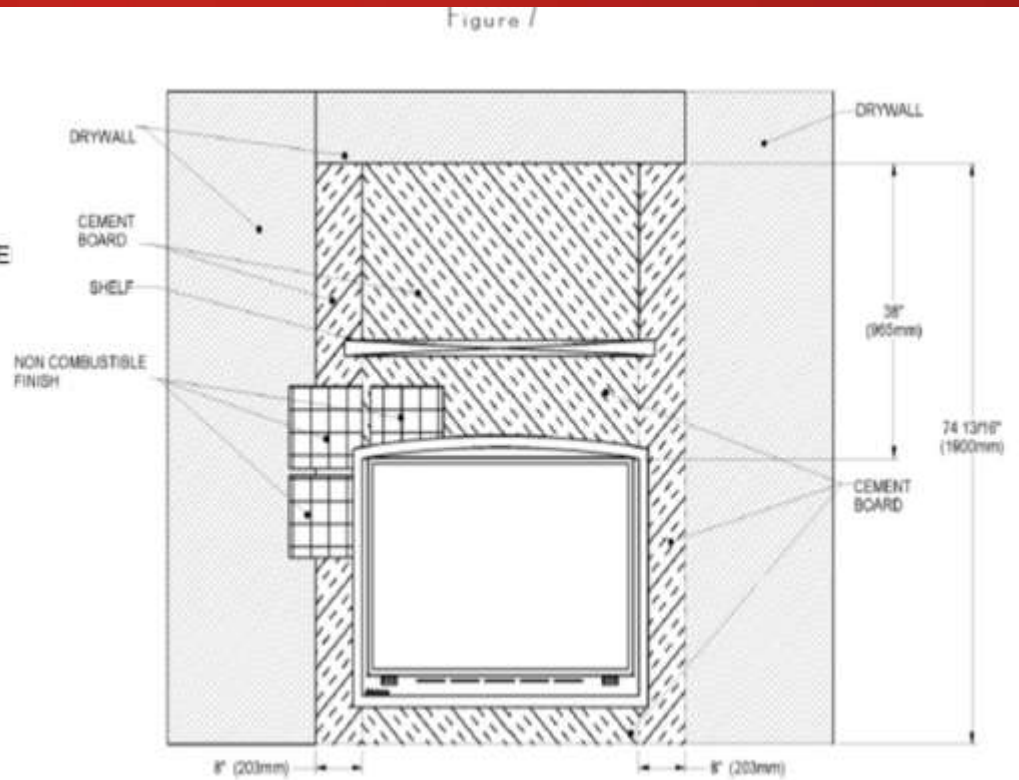
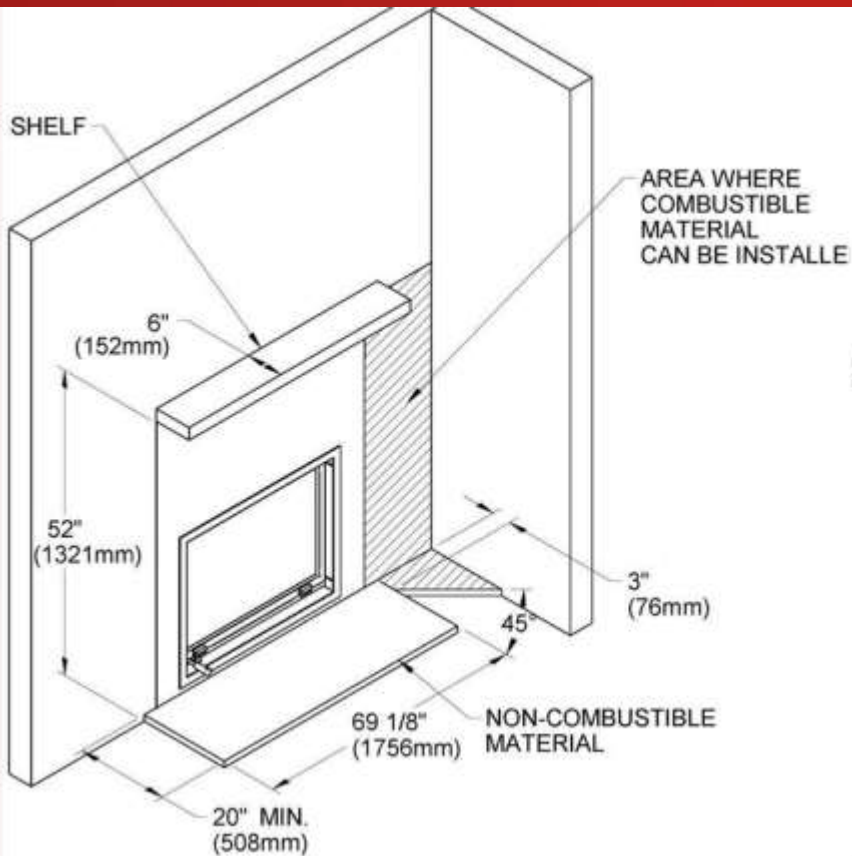


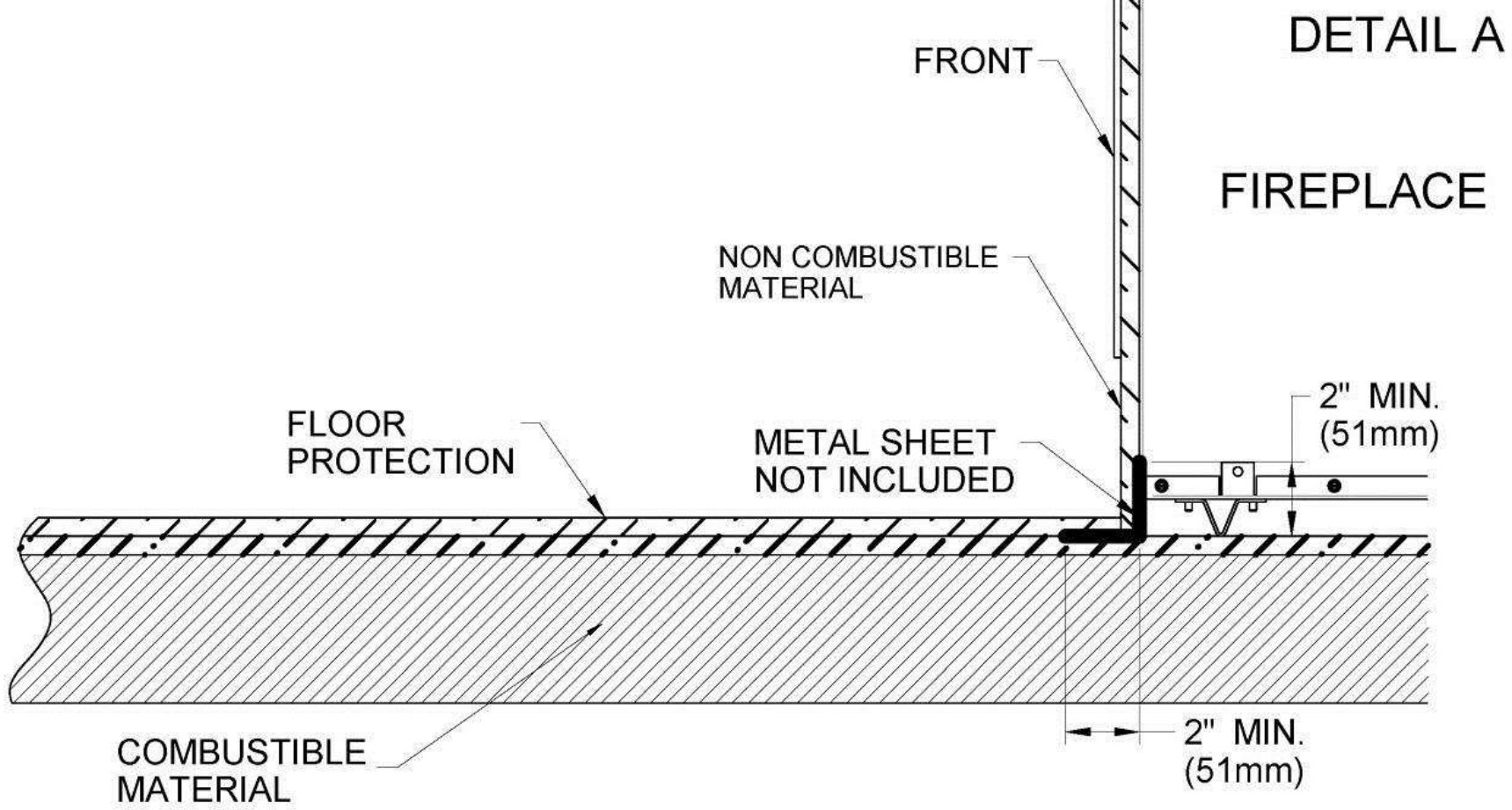
Figure 8 (a)

# FACING REQUIREMENTS

# EMBER STRIP







# EMBER STRIP



# FRESH AIR CONNECTION

- Annex D of B365-17+

DECO

# FRESH AIR CONNECTION

- Annex D of B365-17



# ANNEX D B365-17

B365-17

Installation code for solid-fuel-burning appliances and equipment

## Annex D (informative) Outdoor combustion air

Note: This Annex is not a mandatory part of this Code.

### D.1

Requirements and recommendations for the provision of combustion air from outside the dwelling have been changed significantly over the various editions of this Code. This Annex provides the rationale for the changes.

### D.2

In the 1980s, it was thought that smoke spillage from wood-burning systems could be reduced or eliminated by providing a supply of outdoor air to the appliance. This outdoor air was supplied either directly to the combustion chamber of the appliance or indirectly in the form of a makeup air supply linked to, or in close proximity to, the appliance. Underlying the concept of outdoor air supplies was the belief that most combustion spillage was the result of wood-burning appliances not receiving sufficient combustion air from inside the dwelling. However, research conducted in the late 1980s by Canada Mortgage and Housing Corporation revealed that flawed wood appliance venting system design and not inadequate combustion air was the major factor in combustion spillage. Other research showed that outdoor air supplies were not a simple or effective cure for spillage and that some designs could create a fire hazard. Clauses D.3 to D.5 provide a summary of the research findings.

### D.3

#### D.3

Indirect, makeup-type air supplies respond mainly to the house pressure relative to atmospheric pressure outside, not just to the air requirements of the combustion appliance. An indirect air supply functions simply as a hole in the house envelope, and its principal effect is to change the leakage pattern of the building. Therefore, an indirect outdoor air supply is not an effective strategy for resolving combustion venting problems because it cannot reliably prevent or reduce combustion spillage nor provide protection from depressurization.

#### D.4

Air supplies routed from outside directly to the appliance combustion chamber do not isolate the appliance from room pressure as was originally thought. Direct air supplies can reverse flow direction if the outdoor weatherhood is exposed to wind-induced negative pressure in excess of chimney draft. The flow reversal of hot exhaust gas through such a duct can create a fire hazard. Also, if the house is depressurized to a level greater than chimney draft, spillage will occur from any available opening in the appliance and venting system, so no protection from depressurization is provided by direct outdoor combustion air supplies. In other words, the negative house pressure at which an outdoor aired appliance will spill smoke is about the same as the level at which an appliance that takes its combustion air from the room. It is now generally agreed, based on research findings, that protection against depressurization can best be provided by evaluating and, if necessary, adjusting the pressure in the house by supplying makeup air from outdoors so that the pressure remains within the limits tolerated by the appliance, as is set out in Clause 4.1 and its referenced documents.

#### D.5

Good wood appliance venting system design, component selection, and proper operation have been shown to be more reliable in ensuring successful venting and in preventing spillage problems than

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Installation code for solid-fuel-burning appliances and equipment

supplying combustion air from outdoors. Although the 1990 edition of the NBCC included mandatory requirements for outdoor air supplies for fireplaces, those provisions were removed from the 1995 edition of the NBCC and replaced with a caution regarding the fire hazard posed by outdoor air supplies connected directly to combustion chambers. However, provincial or territorial building codes might still require the installation of outdoor air supplies for all fireplaces. If provincial or territorial regulations require the installation of outdoor air supplies, the technician should be aware that the possibility of reverse flow exists in air ducts routed directly to the combustion chamber, and that it is advisable to leave some clearance from the air duct to combustible material in case a reversal does occur.

# REVERSE BURN



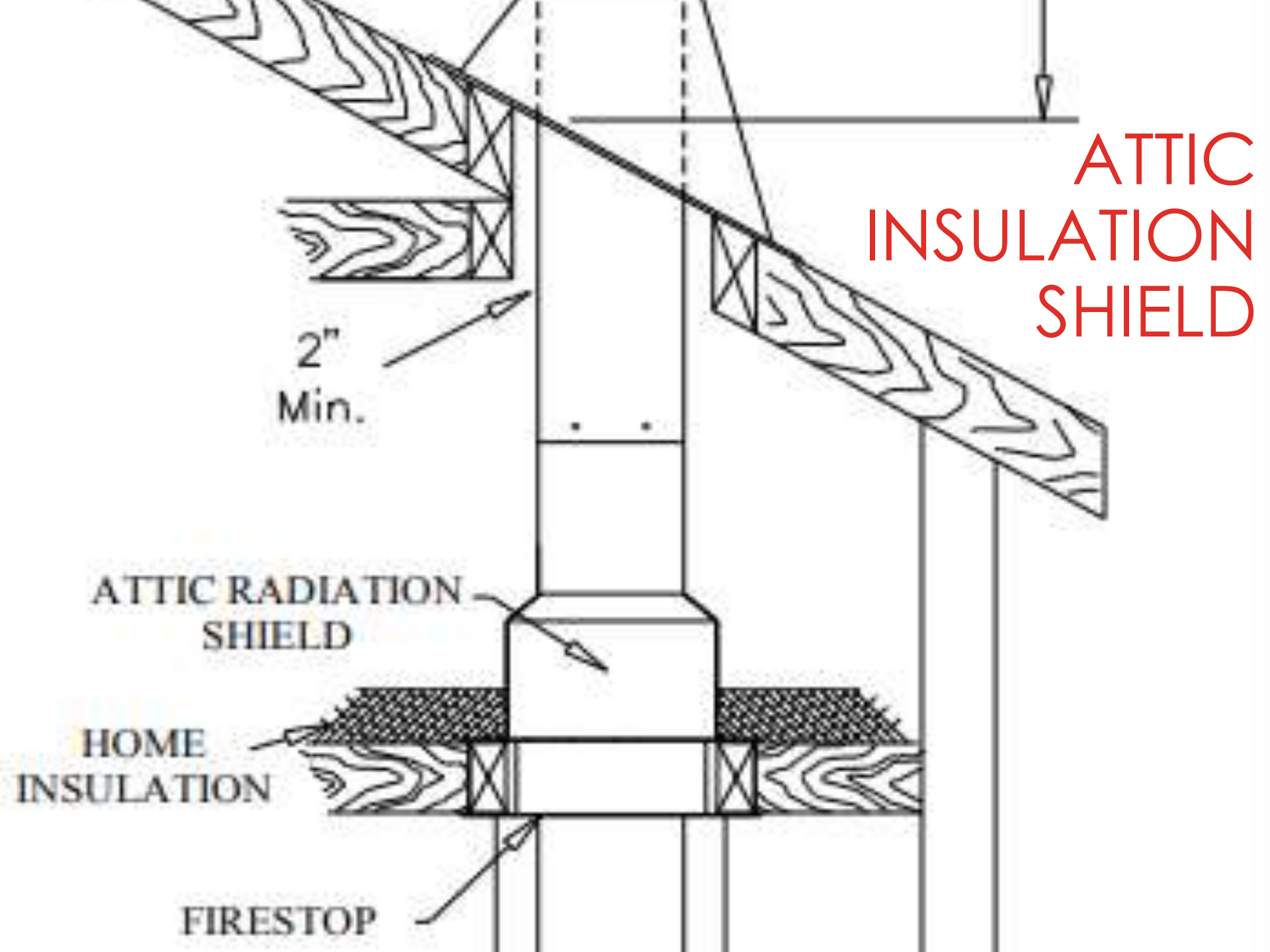
ATTIC  
INSULATION  
SHIELD

2"  
Min.

ATTIC RADIATION  
SHIELD

HOME  
INSULATION

FIRESTOP





SAFE INSTALLATION,  
SAFE HOME

THANK YOU!

Henry  
Nagtegaal  
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