

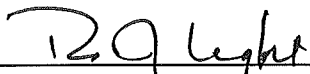
# BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing  
AIBC, EGBC and BOABC

File No: 12-0085

INTERPRETATION

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Interpretation Date:	October 17, 2017
Building Code Edition:	BC Building Code 2012
Subject:	Clearance to framing, finishes and cabinetry from cooktops and ovens
Keywords:	Clearances, cooktops, ovens, framing, finishes, cabinetry, hood fans, over the range (OTR) microwaves
Building Code Reference(s):	9.10.22. , CAN/CSA-B149.1 – 7.32
<b>Question:</b>	<ol style="list-style-type: none"><li>1. For Part 9 Buildings, what are the minimum required clearances between a gas, propane or electric cooktops and ovens and any of the following:<ol style="list-style-type: none"><li>a. Framing, finishes or cabinetry</li><li>b. Metal hood fan</li><li>c. Over the range (OTR) microwave oven</li></ol></li><li>2. For Part 3 Buildings, what are the minimum required clearances between a gas, propane or electric cooktops and ovens and any of the following:<ol style="list-style-type: none"><li>a. Framing, finishes or cabinetry</li><li>b. Metal hood fan</li><li>c. Over the range (OTR) microwave oven</li></ol></li></ol>
<b>Interpretation:</b>	<p>The clearance requirements are different for Part 3 buildings and Part 9 buildings. The clearance requirements are also different for gas &amp; propane appliances and electric appliances.</p> <p><b><u>Part 9 Buildings - natural gas and propane cooktops and ovens</u></b></p> <p>As per Article 9.10.22.1., the clearance is determined as the most restrictive requirements of either the BC Gas Safety Regulation of the BC Safety Standards Act (including the reference standard CSA B-149.1) (see Attachments 1 to 4) <b>OR</b> Articles 9.10.22.2. and 9.10.22.3.</p> <p><b>Vertical clearance from the top of the cooktop burners to framing, finishes and cabinets which are located directly above the cooktop or oven.</b></p> <ul style="list-style-type: none"><li>• 760 mm to <u>combustible</u> framing, finishes and cabinets with no hood fan or OTR microwave</li><li>• 760 mm to <u>combustible</u> framing, finishes and cabinets with hood fan or OTR microwave that projects less than 125 mm beyond the framing, finishes and cabinets</li><li>• 610 mm if the framing, finishes and cabinets are noncombustible</li><li>• 610 mm with a metal hood fan that projects at least 125 mm beyond the <u>combustible</u> framing, finishes and cabinets</li><li>• 610 mm when protected with 6 mm thick insulating millboard covered with sheet metal not less than 0.33 mm thick (refer to Attachment 2 for details of the insulating millboard)</li></ul> <p> R. J. Light, Committee Chair</p>
<p>The views expressed are the consensus of the joint committee with members representing AIBC, EGBC and BOABC, which form the BC Building Code Interpretation Committee. The Building and Safety Standards Branch, Province of BC and the City of Vancouver participate in the committee's proceedings with respect to interpretations of the BC Building Code. The purpose of the committee is to encourage uniform province wide interpretation of the BC Building Code. These views should not be considered as the official interpretation of legislated requirements based on the BC Building Code, as final responsibility for an interpretation rests with the local <i>Authority Having Jurisdiction</i>. The views of the joint committee should not be construed as legal advice.</p>	

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**Vertical clearance from the top of the entire cooktop surface, measured from the level of the burners, to combustible framing, finishes and cabinets which are NOT located directly above the cooktop.**

- 450 mm if there is no fire protection material provided
- Vertical clearances can be reduced if fire protection material is installed on the combustible materials (refer to Attachments 3 & 4).

**Horizontal side clearance from the entire cooktop surface to combustible wall framing, finishes or cabinets:**

- 450 mm if there is no fire protection material provided
- Side clearances can be reduced if fire protection material is installed on the combustible materials (refer to Attachments 3 & 4).

**Horizontal front clearances from cooktops and ovens to combustible materials**

- No front clearance is required for gas or propane cooktops or ovens

**Vertical and horizontal clearances** between a gas or propane cooktop and an exhaust hood or an OTR microwave are based on the more restrictive recommended manufacturer's clearances for the cooktop and the OTR microwave. Refer to Attachment 1 – Article 7.33.8.

## **Part 9 Buildings - electric cooktops and ovens**

As per Article 9.10.22.1., the clearances are determined by Articles 9.10.22.2. and 9.10.22.3.

**Vertical clearance from the top of the cooktop elements to framing, finishes and cabinets**

- 750 mm to combustible framing, finishes and cabinets with no hood fan or OTR microwave
- 750 mm to combustible framing, finishes and cabinets with hood fan or OTR microwave that projects less than 125 mm beyond the framing, finishes and cabinets
- 600 mm if the framing, finishes and cabinets are noncombustible
- 600 mm with a metal hood fan that projects at least 125 mm beyond the combustible framing, finishes and cabinets
- 600 mm when protected with 6 mm thick insulating millboard covered with sheet metal not less than 0.33 mm thick

**Horizontal clearance to combustible wall framing, finishes or cabinets:**

- 450 mm if there is no fire protection material provided
- 0 mm if there is fire protection material provided equivalent to 9.5 mm thick gypsum board

**Vertical and horizontal clearances** between an electric cooktop and an exhaust hood or an OTR microwave are based on the more restrictive recommended manufacturer's clearances for both the cooktop and the OTR microwave.

  
R. J. Light, Committee Chair

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## **Part 3 Buildings - natural gas and propane cooktops and ovens**

The installation of **gas or propane cooktops and ovens** is governed by the BC Gas Safety Regulation of the BC Safety Standards Act (including the reference standard CSA B-149.1) (see Attachments 1 to 4).

### **Vertical clearance from the top of the cooktop appliance to combustible materials which are located directly above the cooktop or oven.**

- 760 mm to combustible materials, or
- 610 mm when protected with 6 mm thick insulating millboard covered with sheet metal not less than 0.33 mm thick (refer to Attachment 2 for details of the insulating millboard)
- For a new residential range, installed in accordance with the certified clearances from combustible material as specified on the appliance rating plate.

### **Vertical clearance from the top of the cooktop appliance to combustible materials which are NOT located directly above the cooktop.**

- The BC Gas Safety Regulation does not provide a prescriptive requirement for this condition
- For a new residential range, installed in accordance with the certified clearances from combustible material as specified on the appliance rating plate.

### **Horizontal side clearance from the cooktop to combustible materials**

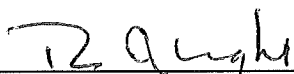
- 150 mm to back and sides, or
- For ranges certified for zero side and rear clearances, 25 mm on the back and 0 mm of the side with a 28 MSG (0.3 mm) thick sheet metal shield on the side walls spaced out a minimum of 6 mm, or
- For a new residential range, installed in accordance with the certified clearances from combustible material as specified on the appliance rating plate

### **Horizontal front clearances from cooktops and ovens to combustible materials**

- No front clearance is required for gas or propane cooktops or ovens

## **Part 3 Buildings - electric cooktops and ovens**

Installation of electric **cooktops and ovens** is governed by the most restrictive written manufacturer's recommendations for the cooktop, oven, hood fan and OTR microwave.



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## ATTACHMENT 1

B149.1-15

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### 7.33 Residential-type ranges

#### 7.33.1

A range shall not be installed in a *bedroom* but may be installed in a *bed-sitting room*, provided that it is not required to be used for space-heating purposes.

#### 7.33.2

A residential-type range shall be installed level. When installed on a *combustible* floor, it shall be set on its own legs or baffled base and shall be *certified* for such mounting.

#### 7.33.3

When a *vent connector* is attached to a range, suitable provision shall be made by the *installer* for the protection of adjacent *combustible* material.

#### 7.33.4

Except where permitted by Clauses 4.13.2 and 7.32.5 to 7.32.7, a residential-type range shall have the following minimum clearances from *combustible* material:

- (a) above — 30 in (760 mm); and
- (b) back and sides — 6 in (150 mm).

#### 7.33.5

A residential-type range *certified* for zero side and rear clearances may be installed with zero side clearance from *combustible* material, provided that there is a 1 in (25 mm) clearance at the back and a 28 MSG (0.3 mm) sheet metal shield on the side walls spaced out a minimum of 0.25 in (6 mm). The shield shall extend from the rear wall to the front edge of the range and from 5 in (125 mm) below to 30 in (760 mm) above the cooking surface.

#### 7.33.6

A new residential-type range shall be installed in accordance with its *certified* clearances from *combustible* material as specified on the *appliance* rating plate.

#### 7.33.7

When the underside of the *combustible* material above a residential-type range is protected with *insulating millboard* at least 0.25 in (6 mm) thick covered with sheet metal not less than 28 MSG (0.3 mm), the clearance above the range as specified in Clause 7.33.4 may be reduced to 24 in (610 mm).

#### 7.33.8

An exhaust hood, an exhaust *appliance*, or a combination thereof installed above a range shall be installed in accordance with *certified* installation instructions for such an exhaust hood or *appliance*.



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## ATTACHMENT 2

### 4.13 Appliance clearances to combustible material

#### 4.13.1

The clearances required in Clause 7 between an *appliance* and *combustible* material shall be considered the minimum without protection and shall be measured from the *appliance*, disregarding either the *burner* or any other projecting component.


#### 4.13.2

The clearances to *combustible* material specified in Clause 7 shall not be reduced unless

- (a) such reduced clearance is *certified* as safe by a nationally recognized certification organization acceptable to the *authority having jurisdiction*, and so marked on the *appliance* nameplate; or
- (b) protection is provided for the *combustible* material, and such protection and such reduced clearance are in accordance with Table 4.1.

**Insulating millboard** — a factory-fabricated board formed with noncombustible materials, normally fibres, and having a thermal conductivity not exceeding

$$1 \frac{\text{Btu} \cdot \text{h} \cdot \text{in}}{\text{h} \cdot \text{ft}^2 \cdot \text{F}} = \left( 0.144 \frac{\text{W}}{\text{m} \cdot \text{K}} \right)$$



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## ATTACHMENT 3

**Table 4.1**  
**Appliance clearance reductions with specified forms of protection**  
(See Clauses 4.13.2, 4.13.4, 7.4.7, and 7.27.3.)

(a) Imperial

Type of protection (applied to the combustible material unless otherwise specified, and covering all surfaces within the distance specified as the required clearance with no protection)	Required clearance (without protection)											
	36 in and greater		18 to 35 in		12 to 17 in		9 to 11 in		6 to 8 in		3 to 5 in	
	Clearance may be reduced by											
Minimum thicknesses	Above	Sides and rear	Above	Sides and rear	Above	Sides and rear	Above	Sides and rear	Above	Sides and rear	Above	Sides and rear
1/4 in insulating millboard spaced out 1 in	6	18	3	9	3	6	3	5	3	4	2	2
28 gauge sheet metal on 1/4 in insulating millboard	12	18	6	9	3	6	3	5	3	4	2	2
28 gauge sheet metal spaced out 1 in	18	24	9	12	6	8	5	6	4	4	2	2
28 gauge sheet metal on 1/8 in insulating millboard spaced out 1 in	18	24	9	12	6	8	5	6	4	4	2	2
1/4 in insulating millboard on 1 in mineral wool batts reinforced with wire mesh or equivalent	18	24	12	12	8	8	6	6	4	4	2	2
22 gauge sheet metal on 1 in mineral wool batts reinforced with wire or equivalent	18	24	12	15	10	10	7	7	4	4	2	2
1/4 in insulating millboard	0	0	0	0	0	0	0	0	2	2	1	1

**Note:** All clearances shall be measured from the outer surface of the equipment to the combustible material, disregarding any intervening protection applied to the combustible material.

(Continued)



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## ATTACHMENT 4

**Table 4.1 (Concluded)**

**(b) Metric**

Type of protection (applied to the combustible material unless otherwise specified, and covering all surfaces within the distance specified as the required clearance with no protection)	Required clearance (without protection)											
	900 mm and greater	450 to 900 mm	300 to 430 mm	225 to 327 mm	150 to 200 mm	75 to 125 mm						
Clearance may be reduced by												
Minimum thicknesses	Above	Sides and rear	Above	Sides and rear	Above	Sides and rear	Above	Sides and rear	Above	Sides and rear	Above	Sides and rear
6 mm insulating millboard spaced out 25 mm	150	450	75	225	75	150	75	125	75	100	50	50
0.3 mm sheet metal on 6 mm insulating millboard	300	450	150	225	75	150	75	125	75	100	50	50
0.3 mm sheet metal spaced out 25 mm	450	600	225	300	150	200	125	150	100	100	50	50
0.3 mm sheet metal on 3 mm insulating millboard spaced out 25 mm	450	600	225	300	150	200	125	150	100	100	50	50
6 mm insulating millboard on 25 mm mineral wool batts reinforced with wire mesh or equivalent	450	600	300	300	200	200	150	150	100	100	50	50
0.68 mm sheet metal on 25 mm mineral wool batts reinforced with wire or equivalent	450	600	300	375	250	250	175	175	100	100	50	50
6 mm insulating millboard	0	0	0	0	0	0	0	0	50	50	25	25

**Note:** All clearances shall be measured from the outer surface of the equipment to the combustible material, disregarding any intervening protection applied to the combustible material.



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