

## Double Wall Clearances and Clearance Plates

In all buildings more than one story in height and in buildings where the roof/ceiling assembly is required to have a fire resistance rating, the vent must be enclosed in a continuous enclosure. This enclosure will be from the lowest fire-rated ceiling or floor above the appliance, through any concealed spaces, to or through the roof to maintain the integrity of the fire separations required by the applicable building code provisions. If the building is less than 4 stories in height, the enclosure shall have a fire resistance rating of not less than 1 hour. If the building is 4 stories or more in height, the enclosure shall have a fire resistance rating of not less than 2 hours. When installed in an open room where an enclosure is not required, double wall vents may be located at clearance to combustibles in accordance with **Table 12**.

**Table 12 - Building Heating Appliance Vent Clearances (For Commercial Applications Only)**

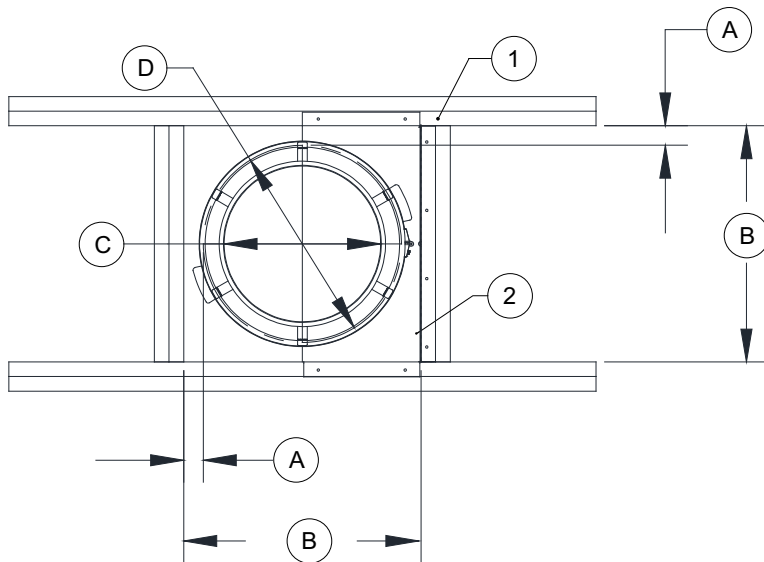
-2V Vent Diameter (ID)	-2V Thimble Assembly Vent Shell Diameter (Thru Penetration)	-2V Thimble Assembly Clearance to Combustibles (Shell to Joist)	Clearance To Non-Combustibles	Through Wall/Floor Opening
5"	9"	3"	0"	15-1/2"
6"	10"	3"	0"	16-1/2"
7"	11"	3"	0"	17-1/2"
8"	12"	3"	0"	18-1/2"
10"	14"	3"	0"	20-1/2"
12"	16"	3"	0"	22-1/2"
14"	18"	3"	0"	24-1/2"
16"	20"	3"	0"	26-1/2"

The information in **Table 12** represents air space, in inches, to surroundings.

DW -2V Type BH: unenclosed, 3" clearance to combustibles from the surface of the vent outer shell.

**Figure 23 - 2V Type BH Vent Clearance**

1. Combustible Surface
2. Clearance Plates - Half plate removed for clarity.
- A. 3" Reduced Clearance
- B. Wall/Floor Opening, refer to **Table 12**
- C. Vent Diameter
- D. -2V Shell Outer Diameter (OD)

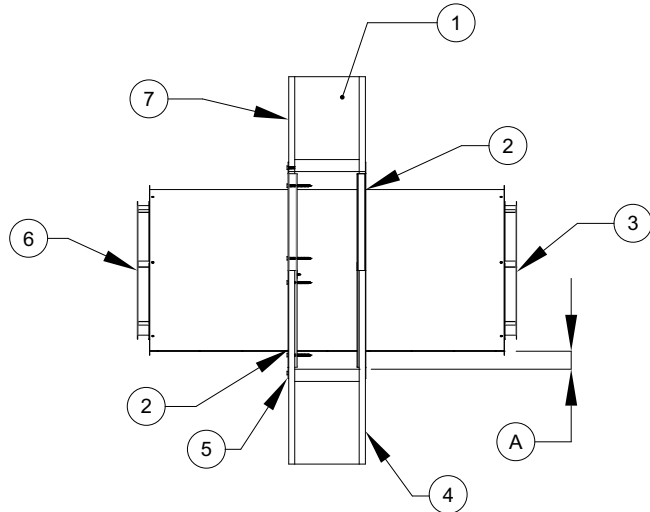


## Double Wall Supports and Clearance Plates

Through floor or wall clearance plate support assemblies are used to support vent sections that penetrate a floor or wall. The full support ring is installed under the double V-band, and the struts are connected to the support ring with supplied 5/16"-18 hardware. Once the struts have been connected, they are secured to the floor/wall using appropriate type and size fasteners supplied by others. The clearance plate support is designed to support the penetrating vent section and maintain annular distance.

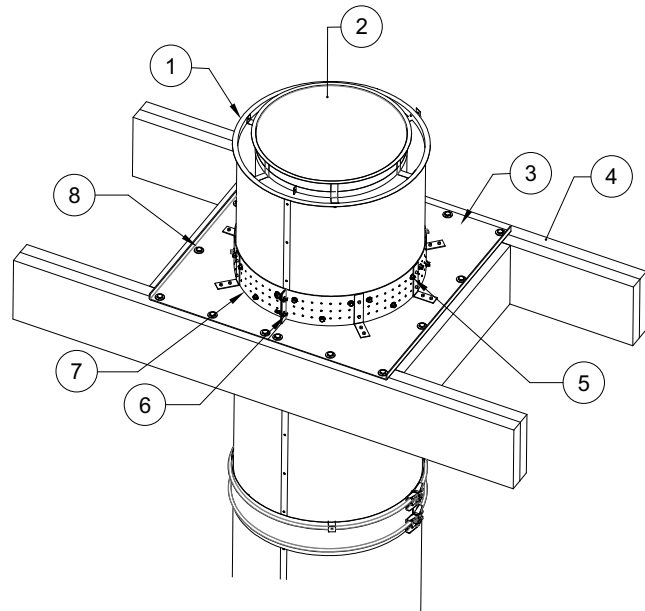
**Figure 24 - Wall Support Assembly**

1. Wood Studs
2. Sealant
3. To Appliance
4. Inner Wall Surface
5. Clearance Plates
6. To Termination
7. Outer Wall Surface
- A. 3" Clearance



**Figure 25 - Floor Support Assembly**

1. -2V Shell
2. Inside Vent
3. Vertical Support Plate
4. Combustible Surface
5. 5/16"-18 x 1-1/2" Self Drilling Screws.
6. 1/4"-20 Whiz Nuts and Bolts.
7. Vertical Support Ring
8. Substrate Hardware, refer to **Table 13 on page 33**

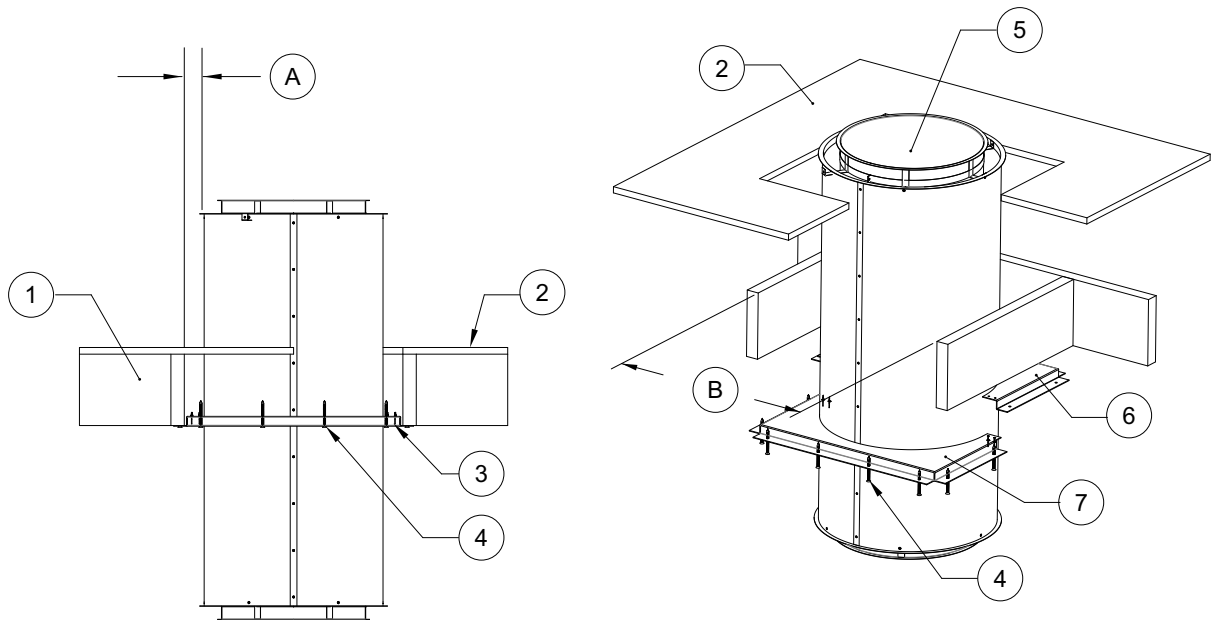


## Double Wall Annular Distance -2V Type BH Clearance

Vent clearance plates are used to maintain clearance to combustibles for -2V Type BH listed vents. These clearance plates are not a hanging substitute for through penetration and fire stop plates. Vent clearance plates are designed to center the vent in the recommend opening and maintain 3" clearance to combustibles as shown in **Figure 23 on page 31**. Vent clearance plates consist of two half plates; the plates are designed so they are inserted into the opening. They are installed on the bottom side of the floor or on the backside of the wall. Frame or cut the opening in the floor/wall, refer to **Table 12 on page 31**. Insert the vent into the opening, then insert one half of the clearance plate. Secure the half plate using appropriate hardware for substrate construction, refer to **Table 13**. Insert the second half plate and secure. Once both plates are secure, the vent will be centered in the opening with a 3" clearance to combustibles.

**WARNING: Clearance (air space) to combustibles must be free from any type of insulation.**

**Figure 26 - Vent Clearance Plates (Floor Installation Shown)**



- |                                       |                      |   |
|---------------------------------------|----------------------|---|
| 1. Joist                              | 5. Inside Vent       | A. Clearance to Combustibles (Shell to Joist), refer to <b>Table 12</b> |
| 2. Floor                              | 6. Clearance Plate 1 | B. Floor Opening, refer to <b>Table 12</b>                              |
| 3. Clearance Plates - Shown installed | 7. Clearance Plate 2 |   |
| 4. Clearance Plate Hardware           |                      |   |

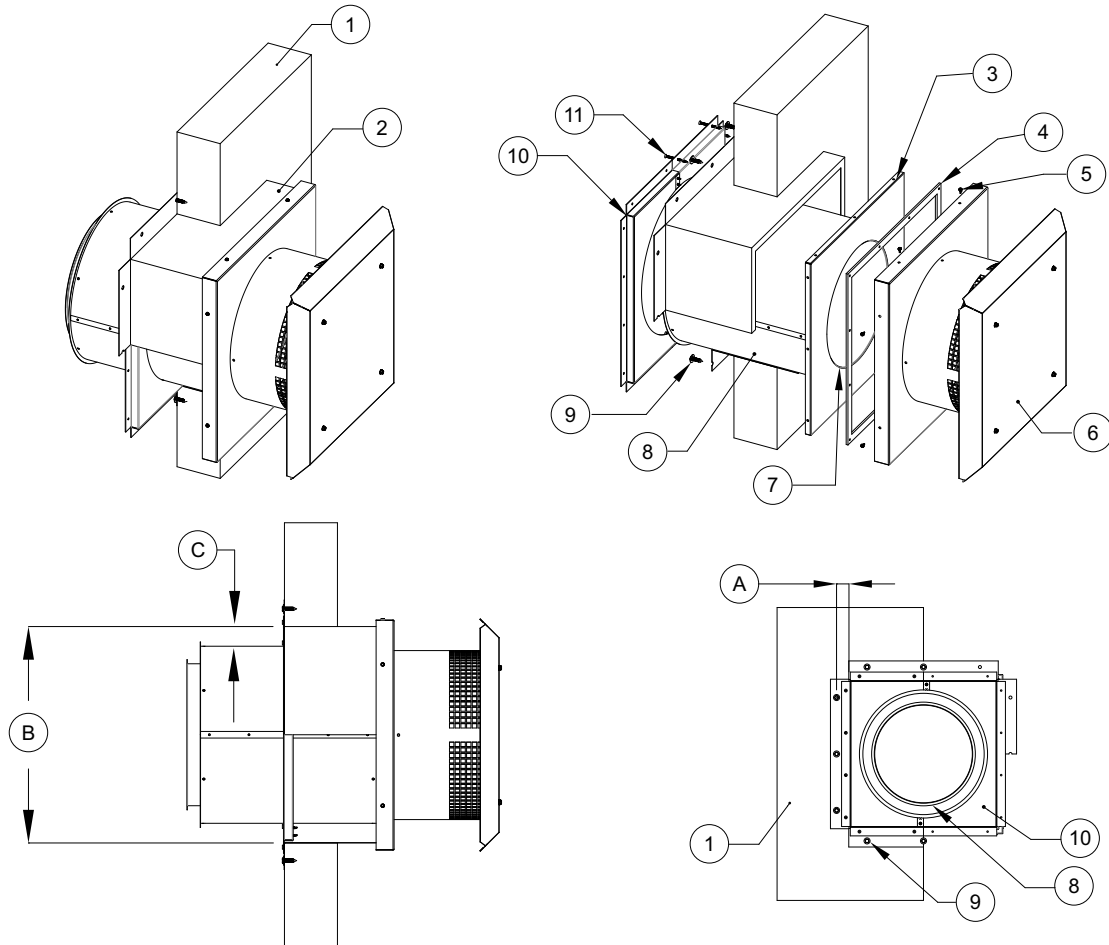
**Table 13 - Substrate Hardware**

Decking Material	Hardware	Edge Distance
Wood - Min G.42	3/8" x 2-1/2" Zinc Plated Steel Hex Head Lag Screw with 3/8" Zinc Plated Steel Washer	1-1/2" Minimum
Concrete - 2500 Min PSI	3/8" Diameter - Expansion Anchor Hilti Kwik Bolt TZ with 3/8" Zinc Plated Steel Washer	3" Minimum
Steel - Roof Truss 12 Gauge or 1/8" Thick	1/4"-14 Min. 1/2" Through Drill-Flex Self-Drilling Screws with 1/4" Zinc Plated Steel Washer	3/8" Minimum

## Double Wall Horizontal Cap Thimble Assembly Installation

Vent clearance plates are used to maintain clearance to combustibles for -2V Type BH listed vents. These clearance plates are not a hanging substitute for through penetration and fire stop plates. Vent clearance plates are designed to center the vent in the recommend opening and maintain 3" clearance to combustibles as shown in **Figure 23 on page 31**. Vent clearance plates consist of two half plates; the plates are designed so they are inserted into the opening. They are installed on the backside of the wall. Frame or cut the opening in the wall, refer to **Table 12 on page 31**. Insert the vent into the opening, then insert one half of the clearance plate. Secure the half plate using appropriate hardware for substrate construction, refer to **Table 13 on page 33**. Insert the second half plate and secure. Once both plates are secure, the vent will be centered in the opening with a 3" clearance to combustibles.

**Figure 27 - Horizontal Installation Through Wall Details using Thimble Assembly**



- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Wall - Wood, Concrete, or Steel</li> <li>2. Vented Curb</li> <li>3. 1/4"-20 x 1-1/2" Zinc Plated Self-Drilling Screws</li> <li>4. High Temperature Gasket</li> <li>5. 1/4"-20 x 2" Zinc Plated Self-Drilling Screws</li> <li>6. Vent Cap</li> <li>7. Transition Plate - Welded to Thimble Assembly</li> <li>8. Thimble Assembly</li> </ol> | <ol style="list-style-type: none"> <li>9. Substrate Hardware, refer to <b>Table 13 on page 33</b></li> <li>10. 3" Clearance Plates</li> <li>11. Clearance Plate Mounting Screws - Secures clearance plates to combustible surface.</li> </ol> <p>A. Edge Distance, refer to <b>Table 13 on page 33</b></p> <p>B. Wall/Floor Opening, refer to <b>Table 12 on page 31</b></p> <p>C. Clearance to Combustibles (Shell to Joist), refer to <b>Table 12 on page 31</b></p> |
|--|--|

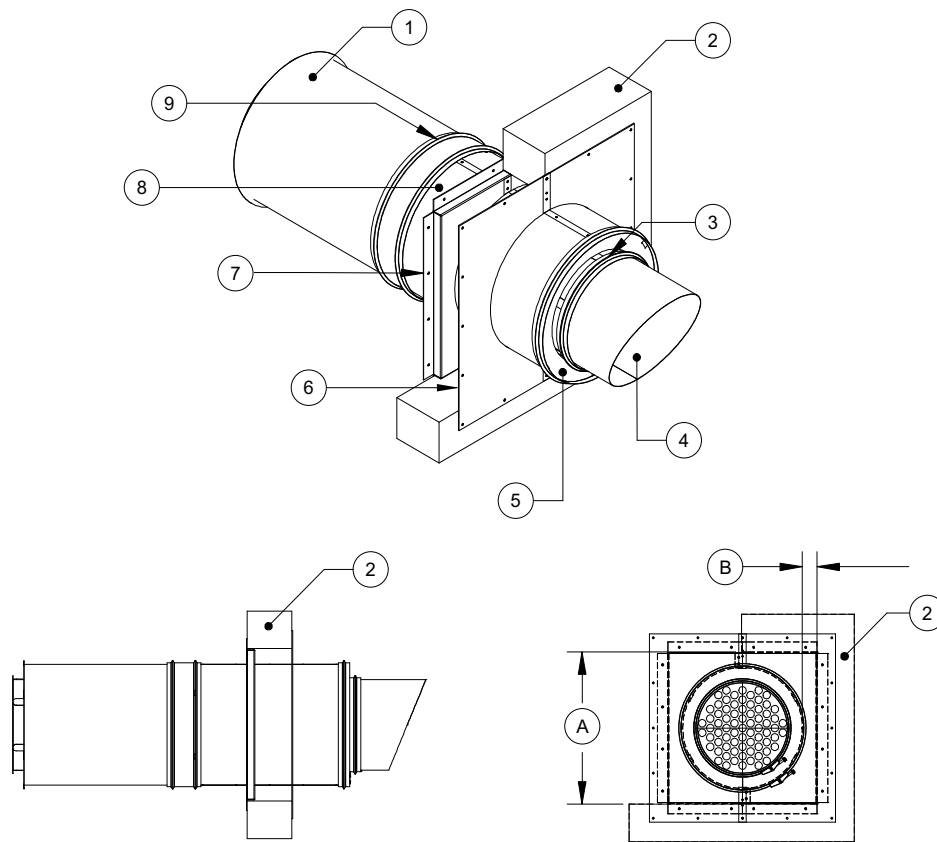
## Double Wall Horizontal Vent Cap

Refer to **Table 12 on page 31** for clearance to combustibles and wall opening dimensions. Once the opening has been cut, install the -2V vent section provided with the kit. Center the clearance plate on the inside of the wall and the outer cover on the outside of the wall. Secure using the provided hardware kit.

Install the -2V vent section to the -2V vent section mounted to the wall. Secure sections and double wall end cap with V-bands. Install the discharge section to the double wall vent section. Secure sections and double wall end cap with V-bands.

Verify clearance to combustibles for the insulated vent section coming through the wall, refer to **Table 12 on page 31**. Inspect the thimble assembly to make sure all hardware is secure and clearance to combustibles is correct.

**Figure 28 - Double Wall Vent Cap Assembly Details**



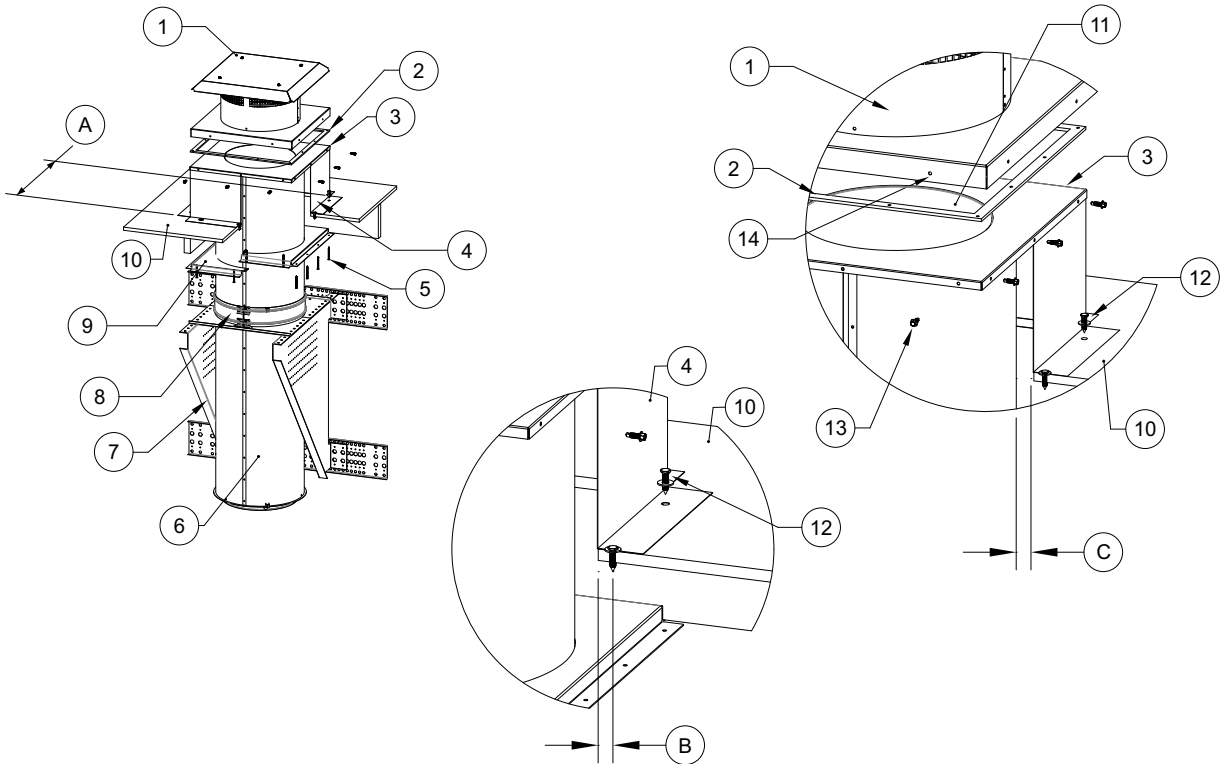
1. -2V Double Wall Vent Section (5"-16")
  2. Wall
  3. Single Wall V-band\*
  4. Discharge Vent Section\*
  5. Single Wall V-band/Double Wall End Cap\*
  6. Outer Cover\*
  7. Clearance Plates\*
  8. -2V Vent Section (5"-16")\*
  9. Double Wall V-band\*
- \* Components included with Vent Cap Assembly

- A. Wall Opening, refer to **Table 12 on page 31**
- B. Clearance to Combustibles (Shell to Joist), refer to **Table 12 on page 31**

## Double Wall Vertical Cap Thimble Assembly

Vent clearance plates are used to maintain clearance to combustibles for - 2V Type BH listed vents. These clearance plates are not a hanging substitute for through penetration and fire stop plates. Vent clearance plates are designed to center the vent in the recommend opening and maintain 3" clearance to combustibles as shown in **Figure 23 on page 31**. Vent clearance plates consist of two half plates; the plates are designed so they are inserted into the opening. They are installed on the backside bottom side of the roof. Frame or cut the opening in the roof, refer to **Table 12 on page 31**. Insert the vent into the opening, then insert one half of the clearance plate. Secure the half plate using appropriate hardware for substrate construction, refer to **Table 13 on page 33**. Insert the second half plate and secure. Once both plates are secure, the vent will be centered in the opening with a 3" clearance to combustibles.

**Figure 29 - Roof Termination Installation Details using Thimble Assembly**



- |   |   |
|---|---|
| 1. Vent Cap   | 11. Inner Vent  |
| 2. High Temperature Gasket  | 12. Substrate Hardware, refer to <b>Table 13 on page 33</b>             |
| 3. -2V Double Wall Assembly/Transition Plate  | 13. 1/4"-20 x 1-1/2" Zinc Plated Self-Drilling Screws                   |
| 4. Vented Curb  | 14. 1/4"-20 x 2" Zinc Plated Self-Drilling Screws                       |
| 5. Clearance Plate Mounting Screws - Secures clearance plates to combustible surface. | A. Through Size Opening, refer to <b>Table 12 on page 31</b>            |
| 6. Double Wall Vent   | B. Edge Distance, refer to <b>Table 13 on page 33</b>                   |
| 7. Vertical Wall Support Assembly   | C. Clearance to Combustibles (Shell to Joist), refer to <b>Table 12</b> |
| 8. Double V-band  |   |
| 9. 3" Clearance Plates  |   |
| 10. Substrate - Wood, Concrete or Steel   |   |