

## Ortal's Deep Dive Series

### Topic: Heat Releases

One of the main differentiators between an Ortal built in fireplace and other direct vent gas fireplaces is Cool Wall Technology engineering that requires a **Heat Release** (an opening in the wall where the fireplace is located)

#### Cool Wall Technology

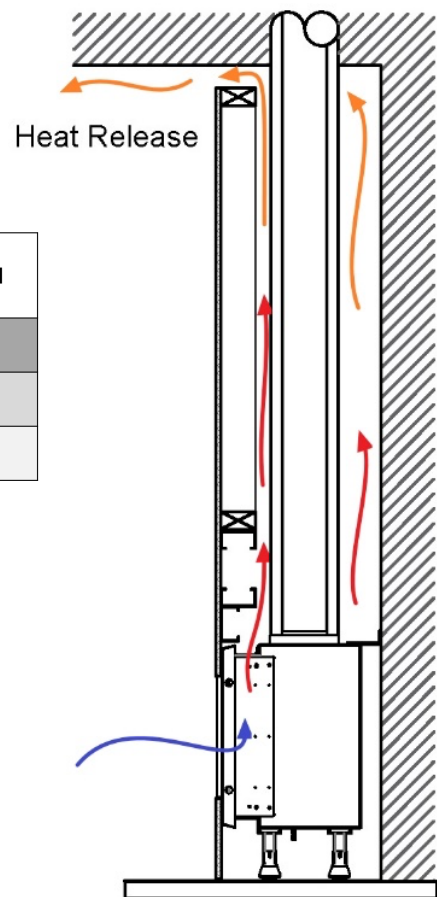
Passive Cool Wall Technology is a result of how (1) the fireplace is engineered and (2) the way the wall around the fireplace is built. An Ortal Cool Wall fireplace is designed to allow convective heat to rise off the firebox and move toward the ceiling of the fireplace wall cavity (chase). By creating an opening (heat release) in the wall near the chase ceiling, a pathway is provided for the heat to move from the chase and into the room. This method dramatically impacts the temperatures of the wall above the fireplace.

Distance Above Viewing Area	Fireplace <u>WITHOUT</u> Cool Wall	Fireplace <u>WITH</u> Cool Wall
0"-6" above viewing area	280°F - 380°F (138°C - 193°C)	100°F - 120°F (38°C - 49°C)
6"-12" above viewing area	195°F - 300°F (91°C - 149°C)	90°F - 110°F (32°C - 43°C)
12" above viewing area	145°F - 250°F (63°C - 121°C)	80°F - 90°F (27°C - 32°C)

This significant reduction of temperature allows for endless design possibilities.

*For example, with an Ortal built in fireplace:*

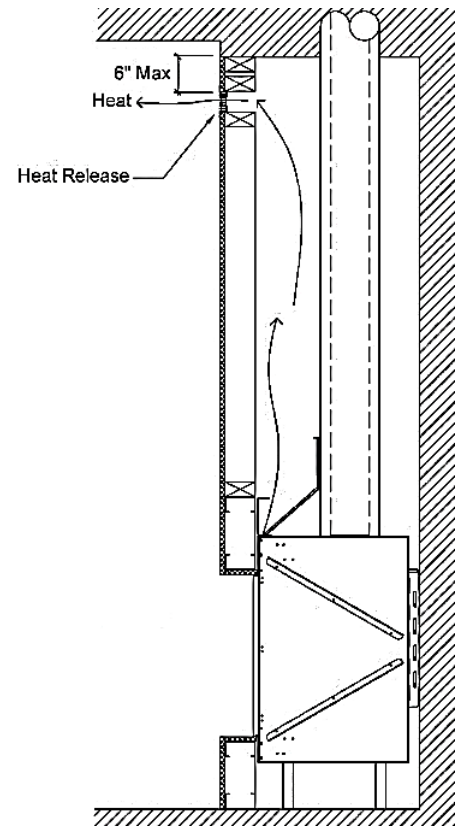
- A TV can be located just 4 inches from the top of the fireplace viewing area.
- No impact or restrictions of type of finish materials that can be used.



## Heat Release Requirements

There are 3 main components to designing an effective heat release: size, location, and orientation.

- **Size:** No specific opening size or dimensions are required provided the minimum square inch requirement is maintained. This varies by model (listed in the corresponding installation manual). However a opening less than  $\frac{3}{4}$ " is not allowed.
- **Location:** A heat release must be located so heat is released into conditioned space. A heat release cannot be located to release air into an exterior location. It should be located within a maximum of 6 inches from the top of the fireplace chase to prevent a heat pocket above the heat release opening. If there is a preference to have the heat release lower than the natural ceiling, this can be achieved by putting in a false ceiling (blocking) inside the chase at the location where the heat is preferred.
- **Orientation:** The heat release may be oriented horizontally (wider than it is tall) across the wall, or vertically (taller than it is wide) down the wall. Since heat moves more quickly out of a horizontal heat release than a vertical one, a vertical heat release must be 30% larger.



\*Note: Height of horizontal heat release must not exceed  $\frac{1}{3}$  of the width or is considered vertical

Fireplace Model Number	Horizontal Heat Release sq.in	Vertical Heat Release sq.in
40,6080,75,25 31 & Curve BI	Minimum 50 sq. in. of free air space	Minimum 65 sq. in. of free air space
44, 51 110,120,130	Minimum 120 sq. in. of free air space	Minimum 156 sq. in. of free air space
60,68,77 150, 170,200	Minimum 200 sq. in. of free air space	Minimum 260 sq. in. of free air space
98 250	Minimum 250 sq. in. of free air space	Minimum 325 sq. in. of free air space

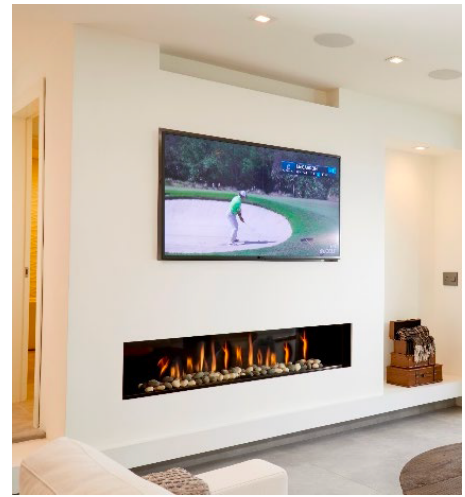
## Heat Release Design Examples

There is no limit to the design for a heat release as long as the sq inch free area requirements are met.

- **Louver / Grille:** When determining a location and design for a heat release a louver or grille can provide a stylish solution. The clear free space of louver / grille must allow for the required sq inch requirement, This is **not** the same as the overall dimension of the louver/grille.



- **Gap:** A gap is an opening in the wall that would not require a cover. The dimensions of the gap can be calculated exactly to meet square inch size requirement



- **Reveal:** A reveal heat release is a popular choice for contemporary and modern designs. It provides the option for the smallest opening.





- **Vertical Heat Release:** A vertically oriented slot, louver, or grille can be an effective way obscure a heat release from front view.  
The vertical heat release can be just on one side of the chase or It can be split between 2 sides. The square inch minimum would then be calculated and divided between the number of openings.



- **Heat Release on Short Chase:** The chase above the fireplace is not required to extend up to the ceiling of the room. It can be built at many heights. The minimum chase height can be as low as 12" from top of fireplace viewing area on most models. Heat release can be located on top of chase or at front edge of chase (as shown in examples)



- **Hidden Heat Release:** There are ways to strategically position the heat release so it is not visible from the viewpoint of the fireplace. For example, if your fireplace is on an interior wall, the heat release can be located on a side wall of the chase or in the wall directly behind the fireplace.



- **Floating Wall:** A floating wall can offer a creative alternative for incorporating the heat release and air intake (for double glass barrier) into one seamless design.



- **Heat Release from Ceiling:** In instances where the heat release in the chase conflicts with architectural elements, such as crown moulding or design intent of fireplace, the heat release can be located in the ceiling. This type of heat release design also requires approval from Ortal to ensure the exact requirements are met.



- **Extended Location:** This type of heat release is located at an extended distance from the fireplace viewing area. In this design, internal blocking and Type X on interior of chase is used to direct the heat toward the heat release opening to prevent it from pooling at the chase ceiling. This heat release design requires approval from Ortal to ensure the exact requirements are met.

