

IMAGINE GREATER WITH WICHMAN



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Fireplace

This simple guide is provided to help the homeowner learn and understand the basics of fireplace construction details.

The decision to install a fireplace can be “THE” statement in evening or weekend entertaining. The idea of sitting in front of a fireplace enjoying the warm glow of the flames, crackling logs, good friends, food, and drink invokes enjoyable times.

However, fireplace construction is not a simple project and not an inexpensive want to have. A lot of details need to be addressed. Zoning and building codes must be met, if the fireplace is part of enclosed or covered patio extension. A standalone fireplace off of an open patio may need to meet building codes regarding placement near the house and chimney height. The type of fireplace also needs to be considered: wood burning, ventless or vented Natural Gas versus constructing the fireplace from brick, stone, or modular construct with a firebox insert and veneer. With such a myriad number of options to consider, it becomes very important to flesh out a concept and do your research to understand how they are constructed and what requirements need to be met for your installation. All of these issues need to be considered as the cost to install a fireplace is significant.

Therefore, our advice is --- **“learn about the type of fireplace you need and want and take your time to make a decision”**. --- We encourage the homeowner to examine as many different options and choices as possible. The best advice on wood burning designs for outdoor fireplace is to examine the Rumford Fireplace web site <https://rumford.com/>. There, you will find the necessary information to examine design and construction details for both indoor and outdoor fireplaces. However, pay close attention to the throat design, as it is specific to a Rumford firebox and not a square firebox. If you wish to have a different wood burning hearth design, then the throat, firebox arch and chimney design will have to change accordingly.

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If a wood burning fireplace is not the preferred choice but you wish to consider Natural Gas, then either vented or ventless inserts are good options to pursue. Each has their pros and cons but the key selection driver becomes the output of the burner and therefore the size of the insert. There are many web site and retailers that sell inserts and one site we use is <https://www.woodlanddirect.com/>. The main reason they are a good resource where we can review the product selected as well as obtain the details necessary to build the fireplace and install the insert.

A strong recommendation we have is to examine “Pins” on Pinterest and” Ideabooks or Projects” on Houzz to get a sense of what is available in the way of design choices. For your convenience, we have listed some embedded sites to view at the end of the bulletin.

This technical bulletin addresses the basics of fire pit construction design features and will help the homeowner to plan the best layout that meets their needs and budget.

Fireplace

The first consideration is the type of fireplace you would like to have: wood burning or gas fired. Next is the placement of the fireplace and whether or not is part of an open patio construction or part of a pavilion or enclosure. If the latter, then zoning and building codes will dictate chimney height, if it burns wood or is gas fired. Proximity to the house can be an issue, if chimney height is not addressed.

The fireplace should be designed and located such that the wind does not affect the draft and that the foundation for the fireplace and any ancillary storage boxes as well as the hearth are suitable to more than adequately support the load of the entire structure. A wood burning fireplace can be a massive structure when built from native stone and quite frankly these type fireplace has the most “Ole World” character.

The general rule of thumb for building a fireplace is, size the fireplace to fit the location and then size the flue to assure enough draft. This is true for wood burning and vented gas fired fireplaces. However, the performance of a fireplace is primarily governed by three factors: fuel combustion, air pressure differential between the firebox and the top of the chimney and temperature differential between air in the location of the fire and that at the top of the chimney. All must be considered in order to achieve successful combustion and exhaust performance.

Therefore, all fireplaces include the same four basic components. These are the base, firebox, smoke chamber and the chimney. Of these, all but the base influence burning performance. However, each of

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these main elements has sub elements with their own design criteria. The best way to reievew these topics is to reasearch them and examine each in detail:

- ❖ Base:
 - Foundation Footings
 - Foundation walls
 - Structural Slab, and Hearth Support
- ❖ Firebox:
 - Hearth
 - Inner Hearth

 - Exerended Hearth
 - Fireplace Opening
 - Proper Sizing
 - Support above the Fireplace Opening
 - Combustion Chamber
 - Throat
 - Damper
 - Smoke Shelf
- ❖ Smoke Chamber
- ❖ Chimney Flue

Other factors that will impact the design are:

- ❖ Structural Considerations
- ❖ Aesthetic Considerations
- ❖ Mantel
- ❖ Fieplace Surround
- ❖ Hearth Extension

There are many fireplaces that are sold as kits. Each has it salient points as well as detractions. In the end, it is really a balance between want, need, cost, functionality and look. So, whatever you chose. Wichman Landscape Construction can advise best fireplace choice that will meet your budget.

Furthermore, we will work along with other contractors to install features such as gas and enclosures..

When first starting to scope out the project, consider these issues:

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- **Your Backyard:** Do you have the space to build a fireplace and what effects will the surrounding environment have on the functionality of the fireplace?
- **Neighbors.** Depending on the project scope and the proximity to neighboring properties, let your neighbors know about your project before you begin.
- **Winterization.** Always a consideration is rain, snow and the harsh elements of the winter season. The fireplace if gas fired should be protected in the winter time to prevent fouling of the burner system. A wooden burning pit does not need winterization but a chimney cap helps. Wichman Landscape Construction can advise the best approach to manage these points.
- **Site Access.** Depending on the work to be done, ease of access and the ability to move equipment and material into and out of the work site needs to be considered and factored into the project.
- **Utilities.** Gas (NG) will need to be made available.

Planning Your Fire Pit:

Use the embedded Wichman worksheet [Grid technical sheet.pdf](#) to layout both a plot as well as elevation plan to develop the design.

Please fill in the blanks to develop the fireplace:

Location on plot plan: _____
 Open location or part of an enclosed patio: _____
 Gas or Wood burning: _____
 If Wood burning then firebox size height and width: _____
 Rumford or Other: _____
 Material Construction: Native Stone, or Brick: _____
 If Gas then Vented or Ventless: _____

Please consider the following:

A. Compliance of site to latest site plan

- Have either a building permit, occupancy permit or zoning ordinance requirement been reviewed, and the proper permits filled out as necessary and applied for approved construction?
- Does the site plan and layout coincide with current site conditions?
- Do the section drawings match the topography of the job-site?

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- Have site utilities been accounted for?
- Are there any recommendations for changes to the site plans to accommodate the added features such as a nooks and storage boxes, seating walls and pillars?

B. Review of reported soil conditions with Wichman Landscape Construction and if necessary a soils engineer

- Are on site soils consistent with soil parameters used in the design?
- Does the site show indications of multiple types of soils and has this been accounted for?
- Is there evidence of landfill areas on site?

C. Review of above-grade water management

- Has surface runoff been accounted for in the site design?
- Will this site be irrigated?
- If storm drains become inoperable where will the water migrate to?
- During renovation of land will temporary drainage be an issue?

D. Review of below grade water management

- How and where will drain piping be installed?
- Is it possible to vent drain pipe to daylight?
- Is venting to a storm drainage system an option?
- Will outlets be located and protected from blockage or damage?

E. Site Access

- Does the site have easy access to earth moving equipment?
- Is there a plan to remediate the property to its former condition if the equipment used to construct the patio damages the surrounding property?
- Does the site allow for the transportation of soil either taken from or brought to the site as fill?

F. Recommended material manufacturers that supply fireplace products into the Pittsburgh region:

- <https://rumford.com/>.
- <https://www.woodlanddirect.com/>
- <http://www.superiorclay.com/>
- <https://www.mykindredliving.com/shop/indoor/surrounds>

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G. Recommended Wichman & social media sites to view for further information and ideas.

- <https://www.facebook.com/wichmanlandscape>
- <https://www.pinterest.com/jeffwichman/>
- http://www.houzz.com/pro/jeffwichman/_public/wichman-landscape-and-construction
- <https://www.pinterest.com/designfireplace/outdoor-fireplace-designs/>
- <http://www.houzz.com/backyard-fire-pit>
- <https://www.pinterest.com/chadking/fire-pits/>

**When in doubt or you if have any questions, please consult
with Wichman Landscape Construction.**

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