

## MECHANICAL INSTALLATIONS FOR HOME OWNERS

The intent of this handout, is to familiarize the home owner or installer, with some basic requirements for the mechanical areas of the home, as well as a few other helpful items. This handout covers basic information. If you have questions not covered in the handout, call before you install. It could save you a lot of time and money.

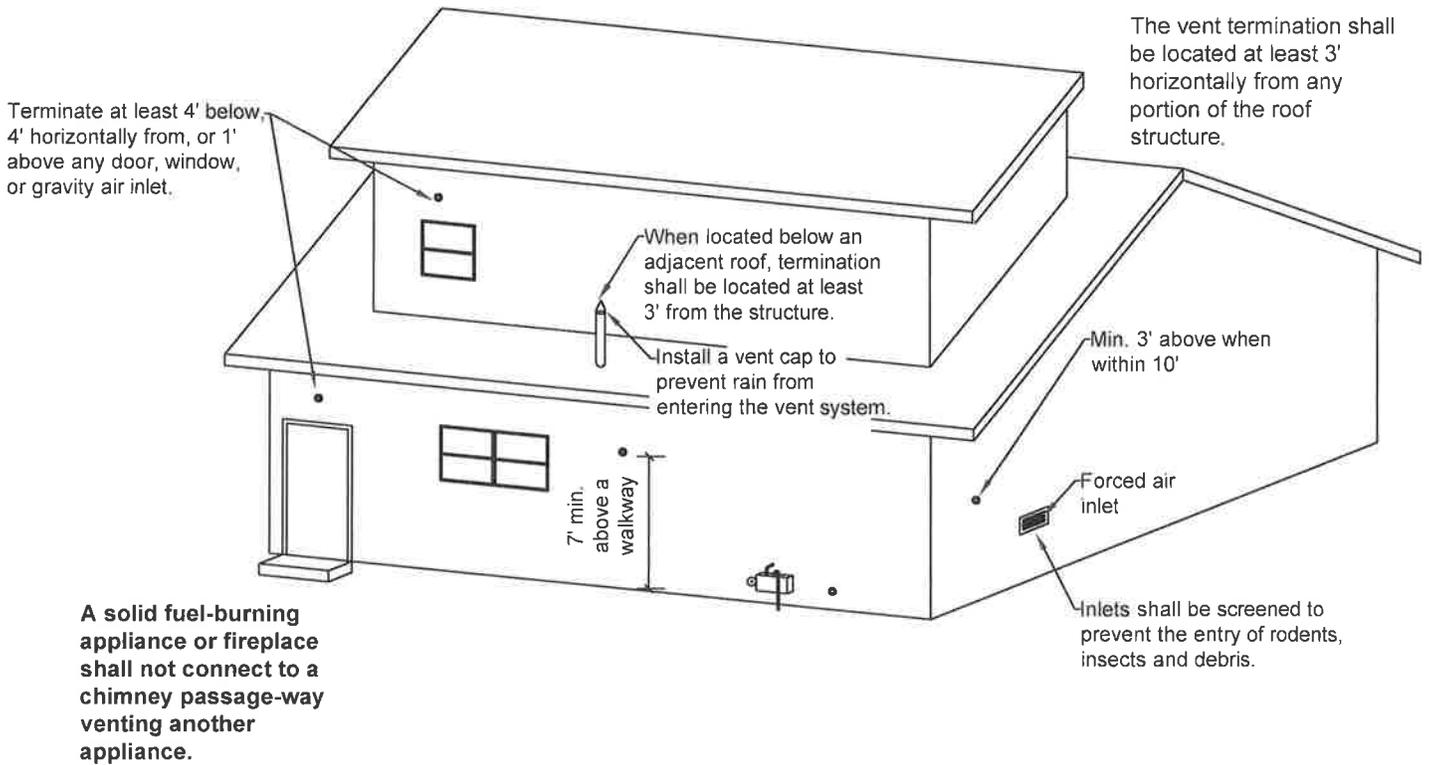
**ALL** appliances and/or equipment shall be installed per the manufacturer's printed installation instructions. Installation instructions shall be on site and located at the appliance and/or equipment at the time of inspection, or the inspection **will not** be performed, thus resulting in a delay of your project.



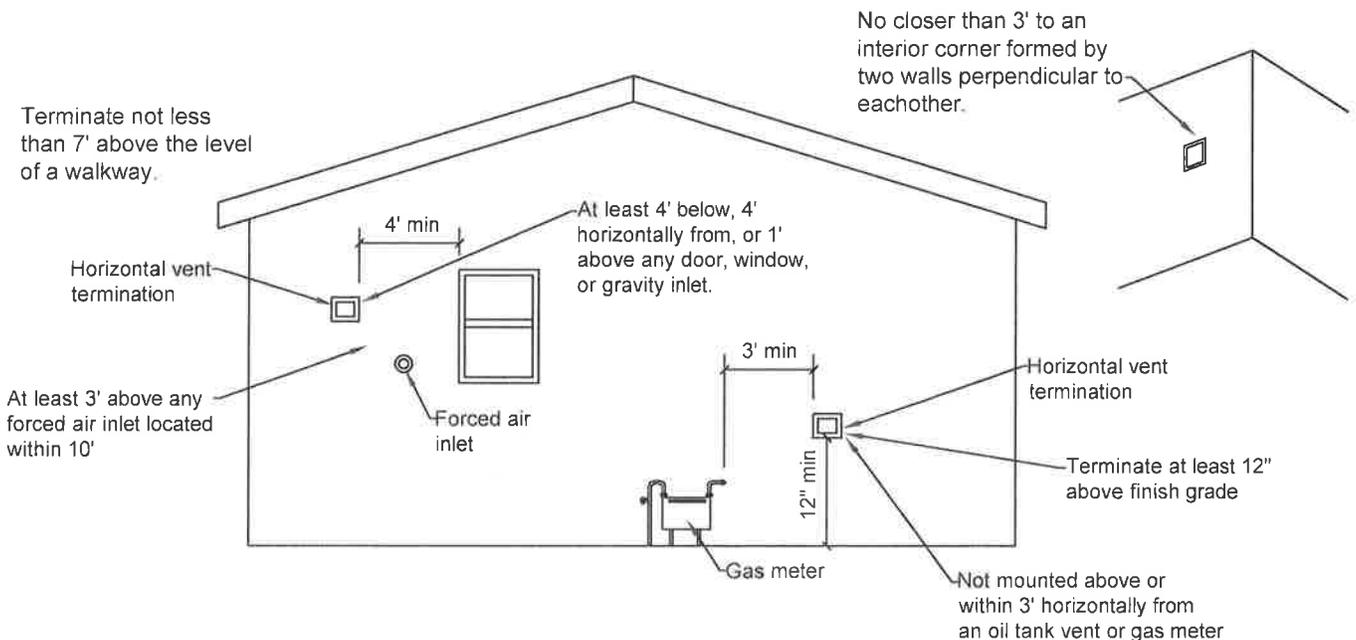
If your property is located in the National Scenic Area, the Columbia River Gorge Commission requires you to comply with all National Scenic Area regulations. They can be contacted at (509) 493-3323.

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## VERTICAL TERMINATIONS



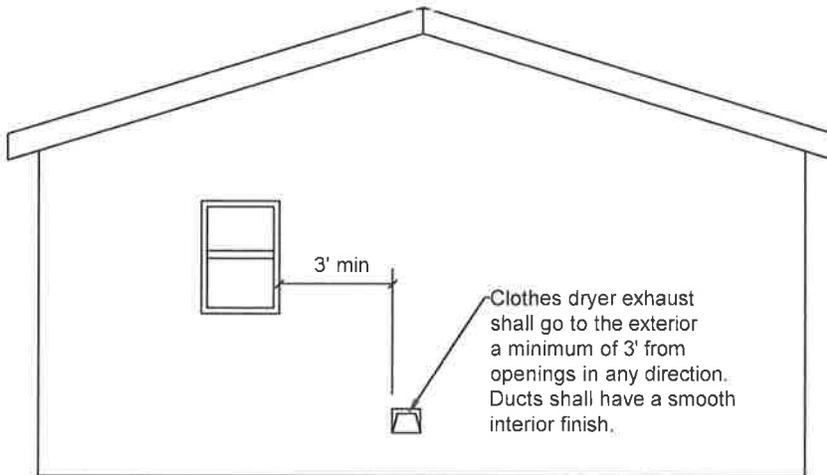
## HORIZONTAL TERMINATIONS



NOTE: Minimum clearances are to prevent products of combustion from re-entering the building, eliminate possible fire hazards, prevent blockage by snow or ice, and to protect people from harmful flue gases. Additional care may be required when taking into consideration such things as wind direction and velocity, as well as the proximity of other structures that may create wind induced pressure zones.

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### CLOTHES DRYER EXHAUST



Dryer exhaust ducts shall be equipped with a backdraft damper located where the duct terminates.

Screens shall not be installed at the duct termination.

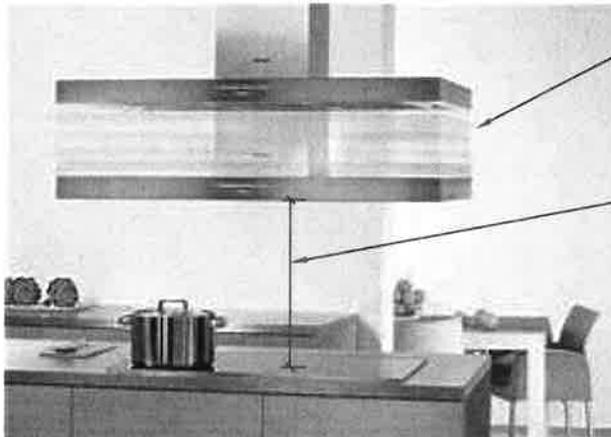
Ducts shall not be installed or connected with sheet metal screws or other fasteners that will obstruct the exhaust flow.

Dryers shall exhaust independently from all other exhaust systems.

### KITCHEN EXHAUST

All kitchen hoods shall exhaust to the exterior. Ducts shall have a smooth interior surface. The size of the exhaust duct shall not be reduced as it exits the structure.

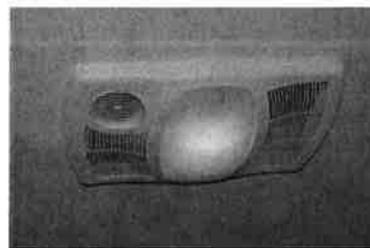
Equipment shall be installed per the manufacturer's printed instructions.



NOTE: If your hood does not exhaust to the exterior, an alternate fan shall be installed that does vent to the exterior. The fan shall be listed for kitchen use.

### SOURCE SPECIFIC EXHAUST

Bathrooms, toilet rooms, utility rooms, and any other areas that produce moisture or odors need an independent exhaust fan that vents to the exterior. Fans shall be 50 cfm minimum, and be installed per the manufacturer's printed installation instructions. Flex duct can be used for these fans, but the length of the ducting is less than smooth wall piping.



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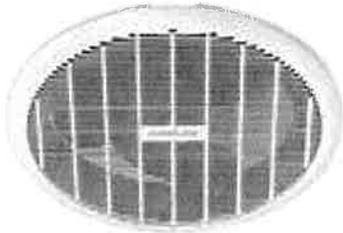
## WHOLE HOUSE EXHAUST



There are a variety of ways, and many different products, to bring in fresh outdoor air, and exhaust stale indoor air throughout your home. Air flow is essential for removing excess moisture and irritants. Your home will be healthier for the occupants and the structure itself.



The size of your exhaust fan will be determined by the type of system you install, and how many hours a day the system will run.



You can locate your whole house fan in a bathroom, laundry room, or hallway. Do not locate the fan in a room where a fuel fired appliance is located.

### Prescriptive Supply Fan Duct Sizing

| Specified Volume<br>From Table M1507.3.3(1)<br>(Energy Code Packet) | Minimum<br>Smooth Duct<br>Diameter | Minimum<br>Flexible Duct<br>Diameter |
|---|------------------------------------|--------------------------------------|
| 50-90 cfm   | 4 inch                             | 5 inch                               |
| 90-150 cfm  | 5 inch                             | 6 inch                               |
| 150-250 cfm   | 6 inch                             | 7 inch                               |
| 250-400 cfm   | 7 inch                             | 8 inch                               |

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All equipment for heating, cooling, or ventilation needs to be installed per the manufacturer's installation instructions. Electrical connections need to be verified by Labor and Industries.

Gas fired equipment will need to have the supply lines pressure checked, and ignition sources need to be at least 18" above the floor if they are installed in your garage.

Equipment shall be protected from vehicle impact. If installed in an alcove or enclosed area, make sure that you leave space around the equipment for maintenance or repairs.

Do not install equipment in hazardous locations. Equipment shall be listed for the location in which you plan to install it.

**Equipment cannot be hung from framing members or mounted on framing members that are not designed to support the load of that equipment.**

At least one thermostat shall be provided for each separate heating and cooling system.

Where the primary heating system is a forced-air furnace, at least one thermostat per dwelling shall be capable of controlling the heating and cooling system on a daily schedule with a programmable thermostat.

Ducts outside of the thermal envelope shall be insulated to a minimum of R-8. Ducts within a concrete slab or in the ground shall be insulated to R-10 with insulation designed to be used below grade.

Framing cavities shall not be used as ducts or plenums. Installation of ducts in exterior walls, floors or ceilings shall not displace required insulation.



**Equipment and duct work shall be inspected prior to any concealment.**

**NOTE:** Most manufacturers will void a warranty if any alterations are made to the appliance/equipment and/or improper installation modifications have been made.