City of Melvindale

BUILDING DEPARTMENT
3100 Oakwood Boulevard • Melvindale, Michigan 48122
(313) 429-1060 • Fax (313) 383-3993 • www.melvindale.org

CERTIFICATE OF OCCUPANCY
RESIDENTIAL CHECKLIST

CERTIFICATE OF OCCUPANCY POLICY **Synopsis of Ordinance 514 Sections 5.66-5.75**

It shall be unlawful for any person to hereafter occupy or reoccupy, or for any owner or agent thereof to permit the occupation or reoccupation of any building, for any purpose, until a Certificate of Occupancy has been issued by the Department of Building and Engineering.

It shall be unlawful for any owner, real estate firm, broker, or salesman, to hereafter consummate a sale of real property until such owner, real estate firm, broker, or salesman has been issued a Certificate of Occupancy by the Department of Building and Engineering.

In order for property to be sold "as is" the purchaser must request in writing, to the Department of Building and Engineering, permission to be allowed to assume responsibility for making the required repairs. After receiving this request, the Department of Building and Engineering will grant either a "Temporary Certificate of Occupancy," which allows conditional occupancy or a "Waiver of Certificate of Occupancy for Sale Only," which does not allow temporary occupancy. The purchaser then will be granted a stated period of time (the MAXIMUM is 6 months) to complete all required repairs and re-inspections. THE COST FOR A TEMPORARY CERTIFICATE OF OCCUPANCY OR A WAIVER IS $40.00 plus a $15.00 Administrative Fee. An escrow deposit in the minimum amount of $500.00 is also required.

2015 Michigan Uniform Energy Code – Commercial
2015 Michigan Building Code
2015 Michigan Mechanical Code
2015 Michigan Plumbing Code
2016 Michigan Rehabilitation Code

2014 Michigan Part 8. Electrical Code
2015 Michigan Residential Code
2015 Michigan Energy Code – Residential
(chapter 11 in residential code)
2015 International Property Maintenance Code

Created by MSC LLC.
In cooperation with the City of Melvindale
Revised on August 6, 2018 Rev. I

EXTERIOR HOUSE, GARAGE AND GROUNDS

1. Install paved off-street parking spaces as required; concrete sidewalks, driveways and steps in good repair
2. Chimneys, foundation, porches, and brickwork require tuckpointing as needed.
3. Porches and stairs over 30" high require hand and guard rails
4. All peeling painted surfaces to be scraped and re-painted.
5. Storm doors, windows and screens in place and working.
6. No broken or boarded windows.
7. Gutters, soffit, fascia, and downspouts in place and in good repair.
8. Ground sloped away from house for positive drainage.
9. Fence requires maintenance.
10. No junk, debris, high weeds or noxious trees.
11. Proper rat wall on sheds and garages.
12. Address numbers (minimum of 4 inches high with a minimum stroke width of 0.5 inch) to be plainly legible and visible from the street or road fronting the property.

INTERIOR

1. Smoke detectors shall be installed in each sleeping room, outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the dwelling, including basements and cellars but not including crawl spaces and uninhabitable attics. Five-year lithium batteries are required.
2. Handrail on all stairs 3 steps or more.
3. Block open sides of stairways.
4. No basement sleeping rooms.
5. Repair or paint basement walls and leaks.
6. Floor surfaces and coverings in good repair. Water tight in kitchen and bathroom.
7. No double cylinder key locks - thumb tum from inside.
8. All walls and ceilings in good repair.
9. All peeling paint scraped and painted.
10. No concrete laundry tubs.
11. All windows properly glazed and working properly.
12. Unit required to be clean and sanitary, free from infestations.

THE INSPECTOR MUST FOLLOW THE STATE OF MICHIGAN AND NATIONAL BUILDING CODE WHEN DOING THE INSPECTION AND THE ABOVE IN NO WAY COVERS THE COMPLETE CODE.

R311.7 Stairways

R311.7.1 Width
Stairways shall be not less than 36 inches (914 mm) in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than 41⁄2 inches (114 mm) on either side of the stairway and the clear width of the stairway at and below the handrail height, including treads and landings, shall be not less than 311⁄2 inches (787 mm) where a handrail is installed on one side and 27 inches (698 mm) where handrails are provided on both sides.
Exception: The width of spiral stairways shall be in accordance with Section R311.7.10.1.
R311.7.2 Headroom
The headroom in stairways shall be not less than 6 feet 8 inches (2032 mm) measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway.
Exceptions:
Where the nosings of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall be allowed to project horizontally into the required headroom not more than 43⁄4 inches (121 mm).
The headroom for spiral stairways shall be in accordance with Section R311.7.10.1.
R311.7.3 Vertical rise
A flight of stairs shall not have a vertical rise larger than 147 inches (3734 mm) between floor levels or landings.
R311.7.4 Walkline
The walkline across winder treads shall be concentric to the curved direction of travel through the turn and located 12 inches (305 mm) from the side where the winders are narrower. The 12-inch (305 mm) dimension shall be measured from the widest point of the clear stair width at the walking surface of the winder. If winders are adjacent within the flight, the point of the widest clear stair width of the adjacent winders shall be used.
R311.7.4.1 Riser height
The maximum riser height shall be 81⁄4 inches (210 mm). The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3⁄8 inch (9.5 mm)
R 408.30519
R311.7.4.2 Tread depth
The minimum tread depth shall be 9 inches (229 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3⁄8 inch (9.5 mm). Winder treads shall have a minimum tread depth of 10 inches (254 mm) measured as above at a point 12 inches (305 mm) from the side where the treads are narrower. Winder treads shall have a minimum tread depth of 6 inches (152 mm) at any point. Within any flight of stairs, the greatest winder tread depth at the 12-inch (305 mm) walk line shall not exceed the smallest by more than 3⁄8 inch (9.5 mm).
R 408.30519
R311.7.5 Stair treads and risers
Stair treads and risers shall meet the requirements of this section. For the purposes of this section, dimensions and dimensioned surfaces shall be exclusive of carpets, rugs or runners.
R311.7.5.1 Risers
The riser height shall be not more than 73⁄4 inches (196 mm). The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3⁄8 inch (9.5 mm). Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. Open risers are permitted provided that the openings located more than 30 inches (762 mm), as measured vertically, to the floor or grade below do not permit the passage of a 4-inch-diameter (102 mm) sphere.
Exceptions: The opening between adjacent treads is not limited on spiral stairways.
The riser height of spiral stairways shall be in accordance with Section R311.7.10.1.
R311.7.5.2 Treads
The tread depth shall be not less than 10 inches (254 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3⁄8 inch (9.5 mm).
R311.7.5.2.1 Winder treads
Winder treads shall have a tread depth of not less than 10 inches (254 mm) measured between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline. Winder treads shall have a tread depth of not less than 6 inches (152 mm) at any point within the clear width of the stair. Within any flight of stairs, the largest winder tread depth at the walkline shall not exceed the smallest winder tread by more than 3⁄8 inch (9.5 mm). Consistently shaped winders at the walkline shall be allowed within the same flight of stairs as rectangular treads and do not have to be within 3⁄8 inch (9.5 mm) of the rectangular tread depth.
Exception: The tread depth at spiral stairways shall be in accordance with Section R311.7.10.1.
R311.7.5.3 Nosings
The radius of curvature at the nosing shall be not greater than 9⁄16 inch (14 mm). A nosing projection not less than 3⁄4 inch (19 mm) and not more than 11⁄4 inches (32 mm) shall be provided on stairways with solid risers. The greatest nosing projection shall not exceed the smallest nosing projection by more than 3⁄8 inch (9.5 mm) between two stories, including the nosing at the level of floors and landings. Beveling of nosings shall not exceed 1⁄2 inch (12.7 mm).

Exception: A nosing projection is not required where the tread depth is not less than 11 inches (279 mm).
R311.7.5.4 Exterior plastic composite stair treads
Plastic composite exterior stair treads shall comply with the provisions of this section and Section R507.3.
R311.7.6 Landings for stairways
There shall be a floor or landing at the top and bottom of each stairway. The width perpendicular to the direction of travel shall be not less than the width of the flight served. Landings of shapes other than square or rectangular shall be permitted provided that the depth at the walk line and the total area is not less than that of a quarter circle with a radius equal to the required landing width. Where the stairway has a straight run, the depth in the direction of travel shall be not less than 36 inches (914 mm).
Exception: A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided that a door does not swing over the stairs.
R311.7.7 Stairway walking surface
The walking surface of treads and landings of stairways shall be sloped not steeper than one unit vertical in 48 inches horizontal (2-percent slope).
R311.7.8 Handrails
Handrails shall be provided on not less than one side of each continuous run of treads or flight with four or more risers.
R311.7.8.1 Height
Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).
Exceptions:
The use of a volute, turnout or starting easing shall be allowed over the lowest tread.
Where handrail fittings or bendings are used to provide continuous transition between flights, transitions at winder treads, the transition from handrail to guard, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed 38 inches (956 mm).
R311.7.8.2 Continuity
Handrails for stairways shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 11⁄2 inches (38 mm) between the wall and the handrails.
Exceptions: Handrails shall be permitted to be interrupted by a newel post at the turn.
The use of a volute, turnout, starting easing or starting newel shall be allowed over the lowest tread.
R311.7.8.3 Grip-size
Required handrails shall be of one of the following types or provide equivalent grasp ability.
Type I. Handrails with a circular cross section shall have an outside diameter of not less than 11⁄4 inches (32 mm) and not greater than 2 inches (51 mm). If the handrail is not circular, it shall have a perimeter dimension of not less than 4 inches (102 mm) and not greater than 61⁄4 inches (160 mm) with a cross section of dimension of not more than 21⁄4 inches (57 mm). Edges shall have a radius of not less than 0.01 inch (0.25 mm).
Type II. Handrails with a perimeter greater than 61⁄4 inches (160 mm) shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of 3⁄4 inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of not less than 5⁄16 inch (8 mm) within 7⁄8 inch (22 mm) below the widest portion of the profile. This required depth shall continue for not less than 3⁄8 inch (10 mm) to a level that is not less than 13⁄4 inches (45 mm) below the tallest portion of the profile. The width of the handrail above the recess shall be not less than 11⁄4 inches (32 mm) and not more than 23⁄4 inches (70 mm). Edges shall have a radius of not less than 0.01 inch (0.25 mm).
R311.7.8.4 Exterior plastic composite handrails

Plastic composite exterior handrails shall comply with the requirements of Section R507.3.

R311.7.9 Illumination

Stairways shall be provided with illumination in accordance with Section R303.7.

R311.7.10 Special stairways

Spiral stairways and bulkhead enclosure stairways shall comply with the requirements of Section R311.7 except as specified in Sections R311.7.10.1 and R311.7.10.2.

R311.7.10.1 Spiral stairways

Spiral stairways are permitted, provided that the clear width at and below the handrail is not less than 26 inches (660 mm) and the walkline radius is not greater than 241⁄2 inches (622 mm). Each tread shall have a depth of not less than 63⁄4 inches (171 mm) at the walkline. All treads shall be identical, and the rise shall be not more than 91⁄2 inches (241 mm). Headroom shall be not less than 6 feet 6 inches (1982 mm).

R311.7.10.2 Bulkhead enclosure stairways

Stairways serving bulkhead enclosures, not part of the required building egress, providing access from the outside grade level to the basement shall be exempt from the requirements of Sections R311.3 and R311.7 where the height from the basement finished floor level to grade adjacent to the stairway is not more than 8 feet (2438 mm) and the grade level opening to the stairway is covered by a bulkhead enclosure with hinged doors or other approved means.

R311.7.11 Alternating tread devices

Alternating tread devices shall not be used as an element of a means of egress. Alternating tread devices shall be permitted provided that the required means of egress stairway or ramp serves the same space at each adjoining level or where a means of egress is not required. The clear width at and below the handrails shall be not less than 20 inches (508 mm).

R311.7.11.1 Treads of alternating tread devices

Alternating tread devices shall have a tread depth of not less than 5 inches (127 mm), a projected tread depth of not less than 81⁄2 inches (216 mm), a tread width of not less than 7 inches (178 mm) and a riser height of not more than 91⁄2 inches (241 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projections of adjacent treads. The riser height shall be measured vertically between the leading edges of adjacent treads. The riser height and tread depth provided shall result in an angle of ascent from the horizontal of between 50 and 70 degrees (0.87 and 1.22 rad). The initial tread of the device shall begin at the same elevation as the platform, landing or floor surface.

R311.7.11.2 Handrails of alternating tread devices

Handrails shall be provided on both sides of alternating tread devices and shall comply with Sections R311.7.8.2 to R311.7.8.4. Handrail height shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).

R311.7.12 Ships ladders

Ships ladders shall not be used as an element of a means of egress. Ships ladders shall be permitted provided that a required means of egress stairway or ramp serves the same space at each adjoining level or where a means of egress is not required. The clear width at and below the handrails shall be not less than 20 inches.

R311.7.12.1 Treads of ships ladders

Treads shall have a depth of not less than 5 inches (127 mm). The tread shall be projected such that the total of the tread depth plus the nosing projection is not less than 81⁄2 inches (216 mm). The riser height shall be not more than 91⁄2 inches (241 mm).

R311.7.12.2 Handrails of ships ladders

Handrails shall be provided on both sides of ships ladders and shall comply with Sections R311.7.8.2 to R311.7.8.4. Handrail height shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).

R311.8 Ramps

R311.8.1 Maximum slope

Ramps serving the egress door required by Section R311.2 shall have a slope of not more than 1 unit vertical in 12 units horizontal (8.3-percent slope). All other ramps shall have a maximum slope of 1 unit vertical in 8 units horizontal (12.5 percent).

Exception: Where it is technically infeasible to comply because of site constraints, ramps shall have a slope of not more than 1 unit vertical in 8 units horizontal (12.5 percent).

R311.8.2 Landings required

There shall be a floor or landing at the top and bottom of each ramp, where doors open onto ramps, and where ramps change directions. The width of the landing perpendicular to the ramp slope shall be not less than 36 inches (914 mm).

R311.8.3 Handrails required

Handrails shall be provided on not less than one side of ramps exceeding a slope of one unit vertical in 12 units horizontal (8.33-percent slope).

R311.8.3.1 Height

Handrail height, measured above the finished surface of the ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).

R311.8.3.2 Grip size

Handrails on ramps shall comply with Section R311.7.8.3.

R311.8.3.3 Continuity

Handrails where required on ramps shall be continuous for the full length of the ramp. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 11⁄2 inches (38 mm) between the wall and the handrails.

Section R312 GUARDS AND WINDOW FALL PROTECTION

R312.1 Guards

Guards shall be provided in accordance with Sections R312.1.1 through R312.1.4.

R312.1.1 Where required

Guards shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Insect screening shall not be considered as a guard.

R312.1.2 Height

Required guards at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than 36 inches (914 mm) in height as measured vertically above the adjacent walking surface or the line connecting the leading edges of the treads.

Exceptions: Guards on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.

Where the top of the guard serves as a handrail on the open sides of stairs, the top of the guard shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) as measured vertically from a line connecting the leading edges of the treads.

R312.1.3 Opening limitations

Required guards shall not have openings from the walking surface to the required guard height that allow passage of a sphere 4 inches (102 mm) in diameter.

Exceptions: The triangular openings at the open side of stair, formed by the riser, tread and bottom rail of a guard, shall not allow passage of a sphere 6 inches (153 mm) in diameter.

Guards on the open side of stairs shall not have openings that allow passage of a sphere 43⁄8 inches (111 mm) in diameter.

R312.1.4 Exterior plastic composite guards

Plastic composite exterior guards shall comply with the requirements of Section R317.4.

R312.2 Window fall protection

Window fall protection shall be provided in accordance with Sections R312.2.1 and R312.2.2.

R312.2.1 Window sills

In dwelling units, where the top of the sill of an operable window opening is located less than 24 inches (610 mm) above the finished floor and greater than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, the operable window shall comply with one of the following:

Operable windows with openings that will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening where the opening is in its largest opened position.

Operable windows that are provided with window fall prevention devices that comply with ASTM F2090.

Operable windows that are provided with window opening control devices that comply with Section R312.2.2.

R312.2.2 Window opening control devices

Window opening control devices shall comply with ASTM F2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the net clear opening area of the window unit to less than the area required by Section R310.2.1.

Section R313 AUTOMATIC FIRE SPRINKLER SYSTEMS

R313.1 Design and installation

Where installed, automatic residential fire sprinkler systems shall conform to the design and installation requirements of the National Fire Protection Association (NFPA) standard 13D or Section P2904.1.

R 408.30539a

Section R314 SMOKE ALARMS

R314.1 General

Smoke alarms shall comply with NFPA 72 and Section R314.

R314.1.1 Listings

Smoke alarms shall be listed in accordance with UL 217. Combination smoke and carbon monoxide alarms shall be listed in accordance with UL 217 and UL 2034.

CERTIFICATE OF OCCUPANCY RESIDENTIAL CHECKLIST

1. Must have A.V.B. on all hose bibbs and laundry faucets.
2. Repair all leaks on water pipes and drips at faucets.
3. Touch up all chipped porcelain sinks and bathtubs.
4. Clean all fixtures.
5. Must have anti-syphon ballcock installed to code in all toilets. This means 1" air gap between overflow tube and inlet side of ballcock. (NOTE: When in the tank, the valve height should be adjusted so that the critical level marked "C.L." on the top area of valve body is at least 1 inch (25mm) above the top of overflow pipe.)
6. Replace any missing or broken clean-out plugs and floor drain strainer covers.
7. A trap is intended to be a simple U-shaped piping arrangement that offers minimal resistance to flow. Prohibited types of traps have undesirable characteristics and are not allowed. Replace all S-traps and traps with deep trap seals; minimum seal is 2", maximum is 4"; sink traps and P-traps are acceptable. Water meters must have gate valves on both sides of meters; gate valves cold side of water heater.
9. Outside hose bibbs must have stop and waste valve.
10. Cement laundry tubs must be replaced. Old drum traps, also.
11. T & P valve on hot water tank must be rigid pipe. No P.V.C. No threads at end of pipe. Minimum from floor 2", maximum 4".
12. You must not have copper and galvanized pipe connections unless dielectric unions are used.
13. Remove saddle valves from water lines. This is usually valves for humidifiers and ice-makers.
14. No water heaters in bathrooms or bedrooms.
15. Connections between P.V.C. and cast iron must be made with a Fernco Coupling or approved adapter.
16. Caulk the base of all toilets.
17. Remove all black pipe installed with water lines.
18. Secure laundry tubs to floor and secure laundry tub faucet to tub with laundry tub block made of plastic or rubber galvanized metal.
19. Base of all showers must be waterproof.
20. When homeowner secures plumbing permit, homeowner must do the work, not a contractor or semi-skilled person.
21. Commercial building work to be done by licensed contractor only. NO HOMEOWNER.
22. Permits must be pulled and paid for before job repairs start. Permits are good for six months only.

What is backsiphonage?
Backsiphonage is the reversal of normal flow in a system caused by a negative pressure (vacuum or partial vacuum) in the supply piping.

What factors can cause backsiphonage?
Backsiphonage can be created when there is stoppage of the water supply due to nearby firefighting, repairs or breaks in city main, etc. The effect is similar to the sipping of a soda by inhaling through a straw, which induces a flow in the opposite direction.

What is backpressure backflow?
Backpressure backflow is the reversal of normal flow in a system due to an increase in the downstream pressure above that of the supply pressure.

What factors can cause a backpressure backflow condition?
Backpressure backflow is created whenever the downstream pressure exceeds the supply pressure which is possible in installations such as heating systems, elevated tanks, and pressure-producing systems. An example

would be a hot water space-heating boiler operating under 15-20 lbs. pressure coincidental with a reduction of the city water supply below such pressure (or higher in most commercial boilers). As water tends to flow in the direction of least resistance, a backpressure backflow condition would be created and the contaminated boiler water would flow into the potable water supply.

What is a cross-connection?
A cross-connection is a direct arrangement of a piping line which allows the potable water supply to be connected to a line which contains a contaminant. An example is the common garden hose attached to a sill cock with the end of the hose lying in a cesspool. Other examples are a garden hose attached to a service sink with the end of the hose submerged in a tub full of detergent, supply lines connected to bottom-fed tanks, supply lines connected to boilers.

What is the most common form of a cross-connection?
Ironically, the ordinary garden hose is the most common offender as it can be easily connected to the potable water supply and used for a variety of potentially dangerous applications.

What is potentially dangerous about an unprotected sill cock?
The purpose of a sill cock is to permit easy attachment of a hose for outside watering purposes. However, a garden hose can be extremely hazardous because they are left submerged in swimming pools, lay in elevated locations (above the sill cock) watering shrubs, chemical sprayers are attached to hoses for weed-killing, etc.; and hoses are often left laying on the ground which may be contaminated with fertilizer, cesspools, and garden chemicals.

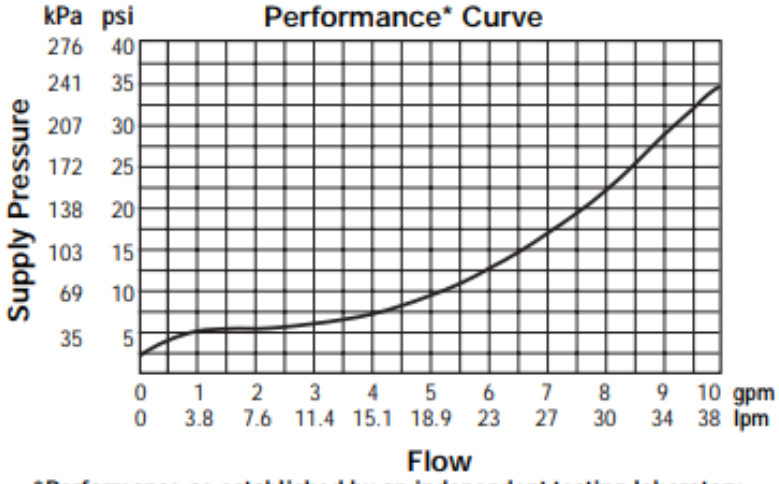
What protection is required for sill cocks?
A Hose Bibb Vacuum Breaker should be installed on every sill cock to isolate garden hose applications thus protecting the potable water supply from contamination.

Should a Hose Bibb Vacuum Breaker be used on frost-free hydrants?
Definitely, providing the device is equipped with means to permit the line to drain after the hydrant is shut off. A “removable” type Hose Bibb Vacuum Breaker could allow the hydrant to be drained, but the possibility exists that users might fail to remove it for draining purposes, thus defeating the benefit of the frost-proof hydrant feature. If the device is of the “Non-Removable” type, be sure it is equipped with means to drain the line to prevent winter freezing.

Can an Atmospheric, Anti-siphon Vacuum Breaker be installed on a hose bibb?
Theoretically yes, but practically no. An Anti-siphon Vacuum Breaker must be elevated above the sill cock to operate properly. This would require elevated piping up to the vacuum breaker and down to the sill cock and is normally not a feasible installation. On the other hand, a Hose Bibb Vacuum Breaker can be attached directly to the sill cock without plumbing changes and at minor cost.

What is an Atmospheric Vacuum Breaker?
The most commonly used Atmospheric Anti-siphon Vacuum Breakers incorporate an atmospheric vent in combination with a check valve. Its operation depends on a supply of potable water to seal off the atmospheric vent, admitting the water to downstream equipment. If a negative pressure develops in the supply line, the loss of pressure permits the check valve to drop sealing the orifice while at the same time the vent opens admitting air to the system to break the vacuum.

CAPACITY



*Performance as established by an independent testing laboratory.

STANDARDS

ASSE Standard 1011

APPROVALS

Series 8, 8A, 8B, 8P, 8FR and NF8 are listed by IAPMO.

Certified by CSA B64.2

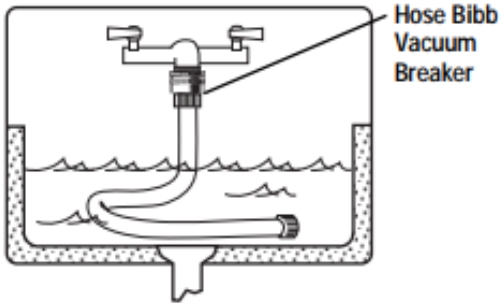
39769

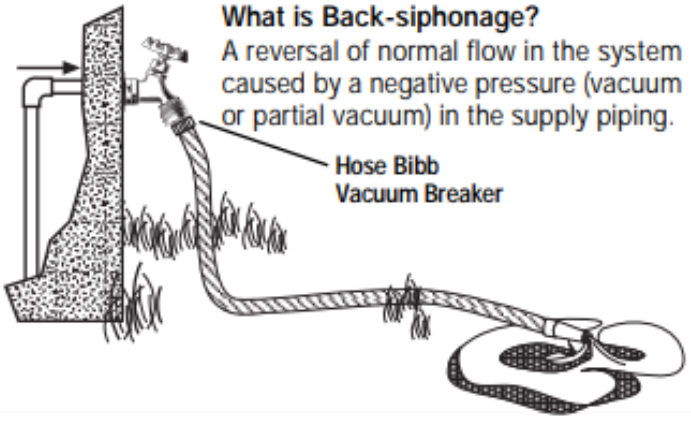
IMPORTANT: Inquire with governing authorities for local installation requirements.

INSTALLATIONS

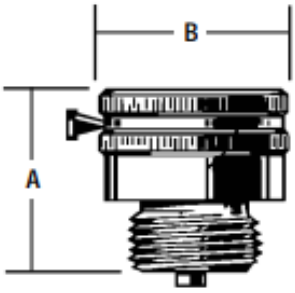
For Inside or Outside Use

Installation - Inside Service Sink





DIMENSIONS-WEIGHT



Valve No.	Size In.	Size mm	Dimensions A In.	A mm	B In.	B mm	Weight oz.	Weight gm.
8, 8C, 8B, 8BC	¾ HT	20	1½	38	1⅜	35	4.0	113.4
8A, 8AC	¾ HT	20	1½	38	1½	38	4.0	113.4
NF8, NF8C	¾ HT	20	2	51	1½	38	5.3	151.2
8P	¾HT	20	1¾	38	1⅜	35	1.5	42.5
8FR	¾HT	20	1¾	38	1¾	38	7.0	200.0

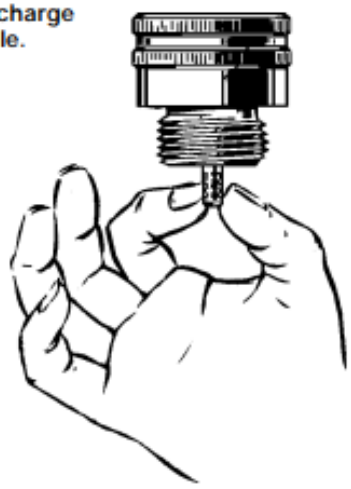
Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

Drainage Features to Prevent Freezing

Watts 8A, 8B and 8P hose connection vacuum breakers are constructed to allow sill cocks to be drained. Simply remove hose coupling and lightly pull knurled tip of stem at outlet of valve to allow drainage of collected water.

Note: Do not use Watts 8, 8A, 8B, 8P Hose Bibb Vacuum Breakers on frost-free hydrants.
Specify No. NF8.

Do not use where discharge of water is objectionable.



MELVINDALE CODE

Sec. 22-61. Storm water discharge generally.

(a) Discharge of storm, surface or roof water into sanitary sewer prohibited. It is unlawful for any person to permit or to cause water from the roof of any building, or storm or surface water, to be directly connected by downspouts, pipes, conduits or other device or apparatus to a drain connected with the sanitary sewer system of the city; it being the intention of this section to prohibit any person from making, continuing, or allowing the existence of any type of connection with eave troughs or other drains on a building with the city's sanitary sewer system, or any other drain emptying into the city's sanitary sewer system so as to cause storm, surface or roof water from any such building to drain into the sanitary sewer system through eve troughs, drain pipes, downspouts, conduits or other devices. This section is declared to be necessary in the interests of public health, safety and welfare to relieve flooding, to control pollution and to help minimize the city's cost for charges for excess flow entering the sewage disposal system.

(b) Disconnection, extension, exemption, violation notices.

(1) Any downspouts, pipes, conduits or other device or apparatus capable of carrying storm, surface or roof water from a building to a sanitary sewer or to sewers or drains leading to any sanitary sewer shall be disconnected. If the owner, lessee, possessor or occupier of any building or structure has not complied with this section, the commissioner of water supply or his designated representative, or any person so designated by the mayor and the council, shall give written notice to any person who shall be in violation of this section, requiring the violation to be corrected forthwith. If the violation is not corrected within 30 days from the date of notice, the commissioner of water supply or his designated representative shall disconnect the downspout or other device and charge the costs thereof to the sewage bill of the resident involved.

(2) It is hereby required that on each building there shall be provided extensions to the downspouts, pipes or conduits at the building grade of not less than 36 inches in length and attached in such a manner as to direct any storm, surface or roof water to the rear of the property or to the street as the case may be, in order to prevent storm, surface or roof water from draining directly against the building walls, adjacent property or into any sanitary sewer or drain

(3) The owner or the authorized agent of any owner of any property may make written application to the water department for exemption from the requirements of this section. The commissioner of water supply may waive the requirements of this section, if the disconnection, because of existing problems with grade or drainage, causes flooding of the involved property or dwelling, flooding of adjacent property or dwelling, substantial pooling of water or causes other such similar conditions to exist. Within 30 days after receipt of an application for exemption, the commissioner of water supply shall, in writing, notify the applicant of his decision. In granting an exemption, the commissioner of water may require such modification of the drainage of storm, surface or roof water as he deems necessary and appropriate under the circumstances of each case. Any person denied such exemption may appeal the same to the building code board of appeals.

(4) This section shall apply to all homes, buildings and structures in the city, or any building using the city's sanitary sewer system, and any exemptions heretofore granted by the commissioner of water supply or by any other official or board of the city are hereby declared void and of no effect; provided, however, that each holder of such a previously granted exemption may reapply for exemption.

(Ord. No. 487, Sections 1, 2; 11-4-87)

THE INSPECTOR MUST FOLLOW THE STATE OF MICHIGAN AND NATIONAL PLUMBING CODE WHEN DOING THE INSPECTION AND THE ABOVE IN NO WAY COVERS THE COMPLETE CODE.

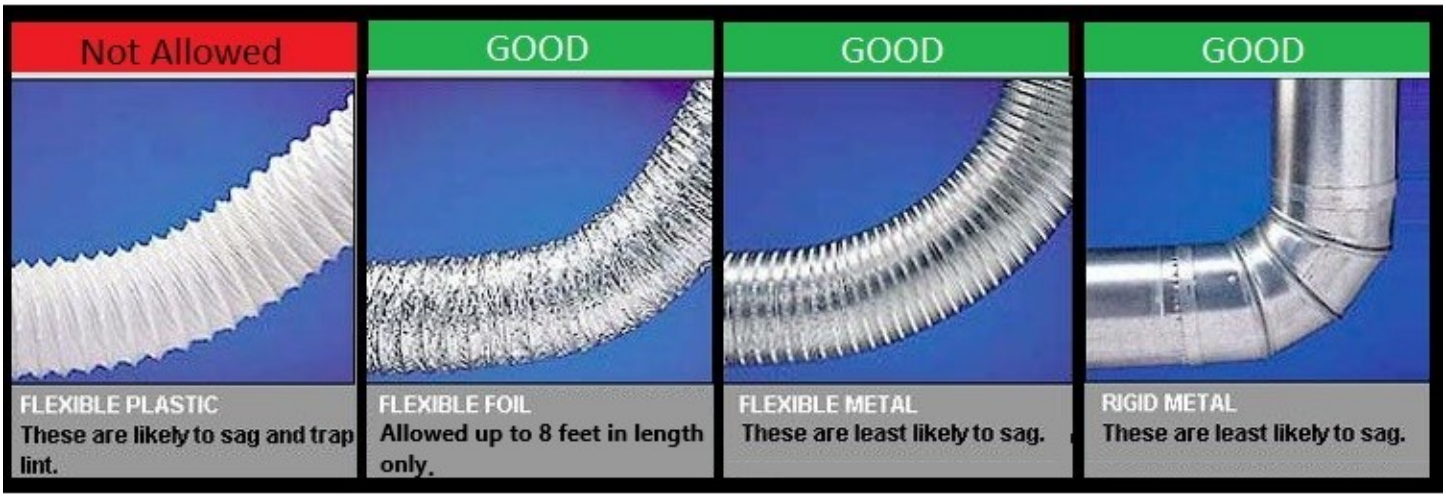
CERTIFICATE OF OCCUPANCY RESIDENTIAL CHECKLIST

1. Submit equipment certification on any heating unit older than two years (Forms available through Building Department)
2. Lever handle AGA approved gas shut off required at all gas fired equipment and appliances
3. Older style gas valves with nut spring will need to be replaced with AGA valve
4. Cap or plug any open gas lines
5. Saddle gas tees must be replaced with Tee's
   • Cooper gas lines are not approved as connectors and must be replaced with pipe. Note: Gas piping over 10 feet requires a pressure test.
6. Remove incinerator and cap all openings
7. All chimneys must be in good condition. Chimney liner report may be required
8. All flue pipes must maintain clearance to all combustible materials.
9. Flue pipes must be properly pitched at a ¼ per foot minimum and be secured with screws
10. All humidifiers must be clean and in working condition. Repair or remove
12. Dryer ducting must be 4" metal through wall
13. Screws are not permitted in dryer ducting. Aluminum foil tape must be used at each joint

HOW TO VENT YOUR DRYER SAFELY

Dryers vent their exhaust, including some lint, through a duct that you or an installer must attach to the machine. Four types of duct are available, but only three of those types are allowed. Flexible plastic (which looks like an oversized vacuum-cleaner hose), pictured below, may sag over time and lead to a buildup of lint in the duct. That lint could catch fire.

A flexible foil duct, is allowed only up to 8 feet in length. F**lexible metal ducts,** are also allowed, however, the **rigid metal duct,** pictured below at right, is the best choice.



14. All registers and grills must be in place and secured to wall
15. Heat must be provided to all habitable rooms
16. A means of return air is required from all rooms except kitchen and bathroom
17. Bathroom and toilet rooms require venting to outdoors through a window or mechanical exhaust fan

THE INSPECTOR MUST FOLLOW THE STATE OF MICHIGAN AND NATIONAL MECHANICAL CODE WHEN DOING THE INSPECTION AND THE ABOVE IN NO WAY COVERS THE COMPLETE CODE.

Electrical

1. Increase electrical service to minimum of three (3) wire I 00 amperes.
   * Install 100-amp circuit breaker panel with 100-amp main breaker.
   * Ground and bond electrical service as per National Electrical Code (N.E.C.).
2. Provide a switch-controlled light at entrance doorway, front, rear, side.
3. Provide wall switch to control ceiling fixture in all rooms.
4. Provide a switch-controlled ceiling light or wall light in bathroom.
5. Provide a switch-controlled ceiling light in kitchen.
6. Provide a switch-controlled ceiling light/switch-controlled duplex.
7. Provide additional duplex electrical receptacles, conveniently located: bedroom(s), dining room, bathroom, living room, kitchen, recreation room.
8. Install multiple switch control at head and foot of stair to second floor or basement with a lighting outlet so placed to adequately illuminate stairs.
9. Install additional lighting outlets in basement so as to provide one lighting outlet per each 200 square feet of floor space.
10. Provide a separate wall mounted 20 ampere laundry circuit.
11. Provide at least one lighting outlet in basement toilet room, basement furnace room, basement utility room.
12. Install correct ampere rated type "s" fuses.
13. Repair/replace defective electrical receptacle(s), wall switches, fixtures, ceiling fixtures in rooms as needed.
14. Discontinue use of extension cords in lieu of permanent wiring where needed.
15. Remove/protect surface wiring located below joists or on walls.
16. Replace missing cover plates on receptacles and switches in rooms as needed.
17. Provide junction box for open splice wiring as needed.
18. Replace/remove unapproved wiring.
19. Install separate 20-amp circuit for kitchen, supplying three (3) duplex outlets.
20. Provide separate 15-amp minimum circuit for furnace.
21. Jumper water meter with a No. 6 minimum copper conductor using approved ground clamps.
22. Remove unused wiring.
23. Replace equipment covers.
24. Install smoke detector(s).
25. Ground kitchen and laundry outlets, and bathroom outlets.
26. Wire pool to code.
27. GFI receptacles are necessary in all receptacles in bathrooms, any plug within six (6) feet of a kitchen sink, and any plug outdoors or in a garage.

THE INSPECTOR MUST FOLLOW THE STATE OF MICHIGAN AND NATIONAL ELECTRICAL CODE WHEN DOING THE INSPECTION AND THE ABOVE IN NO WAY COVERS THE COMPLETE CODE.