

SERVICE CONNECTION REQUIREMENTS



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Types of Service Connections

Cleveland Water has three types of services and connections:

- Domestic, which is metered water service for all uses
- Fire, which is unmetered service solely for the purpose of fire suppression and/or private fire hydrants
- Combined, which carries both domestic and fire suppression service, and is metered with a UL/FM-approved specialty meter. This must be approved in writing by Cleveland Water – see the section on Metered Domestic and Fire Service

Domestic services may be teed off fire connections before the edge of the right of way. Thus only one tap may be required, however, the services shall be considered separate domestic and fire. (see “Single Feed-dual Service Connections”)

Approval and Inspection of Service Connections

Cleveland Water reserves the right to approve or change proposed service connection plans. Changes may be made to the following components to meet Cleveland Water standards:

- Pipe alignment, position, material, and/or size
- Meter type, location, and/or size
- Backflow prevention device type, location, and/or size,

according to the Division's requirements.

The Division of Water will inspect all new and modified water service connections, meter settings, and backflow devices to ensure the standards outlined in this document, Cleveland Water Standard Details, and other requirements provided for on the service connection quote are met. Such inspections are in addition to any local plumbing inspections. Please note that the Division of Water must inspect the lines while the trench is open. If the excavation is backfilled before the Division of Water has been allowed to inspect, the customer will be required to excavate and expose the connection to allow for inspection. It is the responsibility of the customer and their designated contractor to call for inspections, which must be scheduled with Permits and Sales at least 24 hours in advance.

Standard Details

When installing service connections, vaults, meter settings, and backflows, contractors shall conform to Cleveland Division of Water Standard Details. Site Plans for new water service connections shall include applicable Standard Details. The latest versions may be found at clevelandwater.com/construction. In the event a standard detail does not exist for proposed work, please supply a proposed drawing for approval.

Service Taps by the Cleveland Water

All service taps on active, in service water mains are to be performed by Cleveland Water. Approved contractors may perform 1” taps on new or replacement mains with authorization from Cleveland Water. For new or replacement mains, contractors may install tees and tap valves in lieu of taps for larger connections.

Domestic Supply for More than One Building

A domestic service line shall supply no more than one building unless written variance is sought and approved in writing by Cleveland Water.

Depth of Service Pipe

Depth of service pipe from the water main to the curb valve/meter vault for domestic and fire service shall not be less than 6 feet from the established grade and from curb valve/meter vault to building shall not be less than 5 ½ feet from established grade.

Meter Connections

No plastic fittings shall be used to connect to a water meter.

Copper and Brass Couplings

Mechanical joints/fittings such as flared, threaded, or mechanically crimped/pressed connections shall be required before the meter. Soldered/sweat and compression connections shall not be permitted before the meter. After the meter, any connection method approved by local and Ohio plumbing codes and the local plumbing inspector can be used.

Service Pipe Material Two Inch and Less

All service pipe from the curb valve to the home or building with a nominal diameter of two inch and less shall be Type K Copper for all connections 150 feet and less as measured from the right-of-way to the face of home or building.

High-density polyethylene (HDPE) SDR 9 or cross-linked polyethylene (PEX) SDR 9 may be used in lieu of copper under the following conditions:

- The service connection is in excess of 150 feet as measured from the right-of-way to the face of home or building.
- The meter is to be placed in a vault in the right of way or in an easement contiguous to the right-of-way.
- A double-check backflow prevention device is installed in the vault immediately downstream of the meter.
- The piping from the main to the meter and backflow device and within the meter vault shall be Type K Copper. HDPE may only be used from the outlet of the backflow assembly to the house or building.
- All Plastic pipe must meet all applicable performance standards for a pressure rated applications as required in NSF/ANSI Standard 14, and shall comply with NSF/ANSI Standard 61 for health effects. HDPE pipe must be marked as NSF-pw (NSF compliant for potable water)
- The HDPE Pipe must meet all requirements of the latest revision of AWWA C901, and ASTM 03035. Where intermediate joints are necessary connections must be made by either the use of a compression coupling with insert rings or by creating a fusion butt weld.
- PEX Tubing must meet all the requirements of the latest revision of AWWA C904.

All material between the curb valve and the house or building is the responsibility of the property owner. Where HDPE Pipe is used, Cleveland Water recommends that the owner install a tracer tape system so that their connection can be located in the future and that the five and a half foot depth requirements are strictly adhered to so that the line is not susceptible to freezing as HDPE cannot be thawed by Cleveland Water.

Type K Copper must be used between the water main and the curb valves in all instances. HDPE downstream of the curb valve will only be considered upon a written request by the applicant to Cleveland Water.

All service line materials and installation procedures must also meet local building and fire code criteria where applicable. Type K copper is required for all fire service applications unless this conflicts with local building code.

Service Pipe Material Greater than Two-Inches

All service pipes from the curb valve to the home or building with a nominal diameter greater than two inch shall be Class 52 Cement Lined Ductile Iron Pipe for all connections 150 feet and less as measured from the right-of-way to the face of home or building.

PVC Pressure Rated Pipe SDR 18 or thicker as per ASTM 02241 manufactured for potable water application may be used in lieu of Class 52 Cement Lined Ductile Iron Pipe for connections in excess of 150 feet as measured from the right-of-way to the face of home or building. Domestic Service lines in excess of 150 feet also require a meter vault. In such instances, all the piping from the main to the meter and within the meter vault shall be Class 52 Cement Lined Ductile Iron Pipe. PVC may be used from the outlet of the meter assembly to the house or building.

The PVC pipe shall be manufactured and tested in accordance with AWWA Standard C900 for Polyvinyl Chloride (PVC) pressure pipe and fabricated fittings, four in. through twelve- inch (100 mm through 300 mm), for water distribution, or AWWA standard C909 for Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe, four-inch through twelve-inch (100 mm through 300 mm), for water distribution and clearly marked as such. PVC water pipe shall be certified to NSF International Standard No. 61.

All material between the curb valve and the house or building is the responsibility of the property owner. Where PVC Pipe is used, Cleveland Water recommends that the owner install a tracer tape system so that their connection can be located in the future and that the five and a half foot depth requirements are strictly adhered to so that the line is not susceptible to freezing as PVC cannot be thawed by Cleveland Water.

- Class 52 Cement Lined Ductile Iron Pipe must be used between the water main and the curb valves with no exceptions.
- Class 52 Cement Lined Ductile Iron Pipe must be used for all owner side fire service applications in the City of Cleveland with no exception. In direct service communities, PVC meeting the

above standards may be permitted on the owner side of the connection with local fire department approval, provided to the Division of Water in writing.

- All service line materials and installation procedures must also meet local building and fire code criteria where applicable.

Polyethylene Wrap

Polywrap is required for use on all ductile iron pipe on the city side of the connection. It is recommended but not required for use on the customer side.

Service Pipe in Sewer Trenches

Service pipes shall not be laid in sewer trenches except in rock excavation, in which case the service pipe may be put on a shelf not less than eight-inches wide, cut into the side of the trench. In all other cases, there shall not be less than five feet between centers of service pipes and sewer pipes.

Size of Water Mains that cannot be tapped for Service Connections

Water mains 20 inches and larger, as well as any 16 inch main designated a transmission main by Cleveland Water, shall not be tapped for service connections.

Minimum Size of Service Tap

Taps less than one-inch in diameter shall not be approved.

Maximum Size of Service Tap

No service connection shall be larger than the water main which serves it. Tapping sleeves are not permitted to be used in equal size to the tapped main (i.e. no 8" tapping sleeves on 8" mains or 6" tapping sleeves on 6" mains). Customers requiring a connection of equal size to the tapped main shall be required to cut in a tee at the customer's expense, with plans submitted to and approved by Cleveland Water. No service taps larger than the 12 inches are permitted.

Bends on Service Pipe

No horizontal bends are permitted on the service pipe prior to (upstream of) the curb valve.

Size of Curb Valves

Curb Valves shall be equal in size to the connection at the main.

Location of Curb Valves

All service connections require curb valves that shall be located in the right of way approximately three feet behind the face of curb. For water mains in easements, curb valves shall be located approximately three feet from the water main unless otherwise directed by Cleveland Water. If no curb exists, criteria shall be established from edge of pavement.

More than One Domestic Service Line to a Single Building

Only one domestic service line may supply a home or building unless written variance is sought and approved in writing by the Division of Water.

Fire Supply for More than One Building on a Single Parcel

A fire service line shall supply no more than one building. If the local fire department requires looping of the fire line then Cleveland Water will evaluate these situations on a case by case basis.

Backflow Vault for Fire Service

All private fire service connections require a backflow device. A backflow vault for the fire service is required if the distance between the existing right-of-way and the service line point of entry into the building is more than 50 feet. The backflow vault must be placed in the right-of-way or in an easement adjacent to either the right-of-way or a standard water main easement.

Service Lines Crossing Property Lines

Under no circumstances shall a service line cross property lines unless one parcel is landlocked and therefore has no frontage to the water main. In cases such as these, a copy of the easement agreement between the impacted property owners must be sent to the Permits and Sales Office, Cleveland Water.

Service Connections along Frontage of Property

A service connection to a water main shall be permitted only if the water main extends across the full frontage of the premises. On corner lots or lots that are adjacent to more than one street, a service connection will be permitted only if the lot has a water main that is extended across the full frontage as well as across the property limits on the other adjacent street(s) or if a variance is granted by Cleveland Water and the local community containing the parcel.

Casing for Service Connections

No rigid casing is permitted on service connections between the water main and curb valve.

Single Feed-dual Service Connections

A domestic service connection that comes off the fire service connection must be teed off in the right-of-way before either service line enters the meter or the backflow vault. The fire service line is not permitted to tee off a domestic service line.

Reusing Existing Service Connections

An existing service connection can be reused only if the new service pipe after the curb valve is of the same nominal diameter as the existing connection. Lead connections are not permitted to be reused under any circumstances. If a connection cannot be reused, a new connection must be purchased and the existing connection must be plugged at the customer's expense.

No Connections off Circulation Mains

No service connection can be tapped off a designated circulation main. A circulation main is defined as a main installed for the purpose of providing circulation and installed in a circulation easement. This restriction shall include the portion of the circulation main in the public right of way.

Distance between Taps

One-inch connections shall have a minimum distance of five feet between taps when the taps are made on the same side of the water main. One-inch connections made on opposite sides of the water main require a minimum horizontal separation of eighteen inches. Connections larger than one-inch require a minimum distance of five feet between taps. A minimum distance of five feet is required between the tap and a hydrant tee or valves. A minimum distance of two feet is required between a tap and any bell or fitting.

Tap Size and Connection Size

The size of the tap must correspond to the size of the curb valve. The tap size must also correspond to the size of the connection throughout its length unless permission is granted in writing by the Division of Water.

Location of Meter Vaults

Meter vaults are to be installed in the right-of-way or within the water main easement or adjacent to either the right-of-way or water main easement in a meter vault easement.

Metered Domestic and Fire Service

Combined services are only permitted where approved in writing by the Cleveland Division of Water where installing separate domestic and fire services is unreasonably cost prohibitive. Where approved, the customer must purchase an approved UL/FM meter, as Cleveland Water does not stock such meters.

One Meter Allowed Per Service Connection

Only one meter shall be set on one service line unless the owner is installing a sewer deduct meter for irrigation purposes. The deduct meter must be purchased from Cleveland Water. Cleveland Water reads both the domestic meter and the deduct meter but is not responsible for repairs to the deduct meter. The local sewer authority has jurisdiction over allowing a sewer deduct meter.

Sub Metering

Cleveland Water will not sub meter any property. While customer can purchase and install additional meters for the purpose of submetering, customer bills will always be determined by the primary meter and billed to the property owner.

Placement of Meter

A meter vault is required when the size of the meter is 3-inch and greater unless special permission is granted in writing by the Division of Water. A meter vault will also be required if the distance between the existing right-of-way and the domestic service point of entry into the building is more than 250 feet. The meter must be installed immediately after the service line enters the building in a horizontal position a maximum of 36 inches from the basement floor. The backflow device, if required, is to be installed immediately after the meter unless another location is specified by Cleveland Water.

Meter Bypass Settings Inside Buildings

Bypass lines are not permitted on meter setters inside buildings or in vaults accessible from the interior of the building.

Multiplex Connections

Twoplex/Duplex connections are permitted only to serve buildings which are less than 50 feet apart. The tap must be made in line with any property line or division between the two premises being served. The line(s) must remain perpendicular to the right-of-way, with the exception of the wye branch. Curb valves must be located no more than 5 feet from the edge of the right-of-way. Once the individual lines have separated, they must remain within 5 feet of each other. All lines on private property must be on the property they are serving or common area to all accounts served by the multiplex connection. Threeplex and fourplex connections shall only be permitted were specifically approved in writing by the Division of Water.

Variances

Any deviation from these requirements must be approved in writing by the Commissioner of the Division of Water or their designee. Approval must be in the form of a letter, email, or recorded as part of the service connection quote.