

PROJECT ADDRESS _____

OWNER _____

RESIDENTIAL PIPE CALCULATOR

HWS Units at 75% of Column C if fixture uses Hot and cold:

	A FIXTURE	B QUANTITY x UNITS	C FIXTURE UNITS	D HWS UNITS	
1				(x 0.75) =	
2					
3					
4					
5					
6					
7					
8					
9					
10					
Total Fixture Units: *(Building Supply based on Total Units)			*	Total Fixture Units: * (Branch to Hot Water Heater)	**

DIRECTIONS: Building supply is based on Column C. Branch to HWH based on Column D. Assign fixture-units from remote outlet toward meter, main upstream from WH branch to carry all cold plus hot, need not exceed size or FU's from Column C. Size pipe per FU's below. Provide a sketch on the back of this sheet with proper sizes.

SIZE	FIXTURE UNITS
½ in.	3.5
¾ in.	12.0
1 in.	25.0
1 ¼ in.	45.0
1 ½ in.	60
2 in.	135

Water Supply Fixture Units (WSFU) and Minimum Fixture Branch Pipe Sizes

Individual Fixtures ²	Minimum Fixture Outlet Pipe Size ¹	Private		Public	
		Individual Dwelling	3 or more Dwellings	General Use	Heavy-Use Assembly
Bar Sink.....	½”	1.0	1.0	2.0	
Bathtub or Combination Bath/Shower	½”	4.0	3.5		
Bidet	½”	1.0	0.5		
Clinic Sink.....	½”			8.0	
Clotheswasher, domestic	½”	4.0	2.5	4.0	
Dental Unit, cuspidor.....	½”			1.0	
Dishwasher, domestic	½”	1.5	1.0	1.5	
Drinking Fountain or Watercooler.....	½”			0.5	0.75
Hose Bibb.....	½”	2.5	2.5	2.5	
Hose Bibb, each additional	½”	1.0	1.0	1.0	
Kitchen Sink, domestic	½”	1.5	1.0	1.5	
Laundry Sink.....	½”	2.0	1.0	2.0	
Lavatory	½”	1.0	0.5	1.0	1.0
Lawn Sprinkler, each head.....		1.0	1.0	1.0	
Mobile Home, each.....		12.0	12.0		
Service Sink or Mop Basin	½”			3.0	
Shower	½”	2.0	2.0	2.0	
Shower, continuous use	½”			5.0	
Urinal, 1.0 GPF.....				4.0	5.0
Urinal, greater than 1.0 GPF.....				5.0	6.0
Urinal, flush tank.....	½”			3.0	4.0
Washfountain, circular spray	¾”			4.0	
Washup Sink, each set of faucets.....	½”			2.0	
Water Closet, 1.6 GPF Gravity Tank.....	½”	2.5	2.5	2.5	4.0
Water Closet, 1.6 GPF Flushometer Tank.....	½”	2.5	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Valve	1”	5.0	5.0	5.0	8.0
Water Closet, 3.5 GPF Gravity Tank.....	½”	3.0	3.0	5.5	7.0
Water Closet, 3.5 GPF Flushometer Valve	1”	7.0	7.0	8.0	10.0
Whirlpool Bath or Combination Bath/Shower	½”	4.0	4.0		

Notes:

1. Size of the cold branch outlet pipe, or both the hot and cold branch outlet pipes.
2. For unlisted fixtures, refer to a listed fixture with a similar flow rate and frequency of use.
3. The listed fixture unit values represent their total load on the cold water service. The separate cold water and hot water fixture unit value for fixtures having both cold and hot water connections shall each be taken as three-quarters (3/4) of the listed total value of the fixture.
4. The listed minimum supply branch pipe sizes for individual fixtures are the nominal *I.D.) pipe size.
5. “General use” applies to business, commercial, industrial, and assembly occupancies other than those defined under “Heavy-use.” Included are the public and common areas in hotels, motels, and multi-dwelling buildings.
6. “Heavy-use assembly” applies to toilet facilities in occupancies which place a heavy, but intermittent, time-based demand on the water supply system, such as schools, auditoriums, stadiums, race courses, transportation terminals, theaters, and similar occupancies where queuing is likely to occur during periods of peak use.
7. For fixtures or supply connections likely to impose continuous flow demands, determine the required flow in gallons per minute (GPM) and add it separately to the demand (in GPM) for the distribution system or portions thereof.