

Information contained in this Memo is based upon drainage/waste and vent pipe sizing requirements in the 2022 California Plumbing Code (CPC) and should not be considered a complete source of plumbing code requirements.

Drainage and vent pipe sizing is based on drainage fixture unit (DFU) loading and minimum trap arm* size.

1. Sewer** and main drain must be 3" or 4" sloped at 1/4"/ft. 4" pipe may slope at 1/8"/ft if necessary to maintain gravity drainage.
2. Determine the drainage and vent pipe sizes based on the total number of drainage units for each section of pipe. See exceptions.
3. Drainage pipes for individual fixtures must be at least the pipe size of the trap/trap arm per table below.
4. Drains for kitchen sinks, showers and laundry standpipes must be 2" (kitchen trap arms may be 1-1/2")
5. Drains and trap arms for toilets must be at least 3", trap arm length may be up to 6' in length measured from flange to vent opening.
6. Up to five (5) toilets may be connected to a 3" common drain.
7. Horizontal drains and sewer require cleanouts. Exception: Drains that do not serve sinks and are less than 5 feet in length.
8. Island sinks require special venting. See [Island Sink Handout](#)
9. Toilets require minimum 2" vents. Vents must extend through the roof individually or combined.
10. Vertical wet venting - 1 and 2 DFU trap arms are allowed to connect directly to the vent of other fixtures. The vertical wet vent section must be one (1) pipe size larger than the required drain size. See CPC Section 908.1 for detailed requirements.
11. Horizontal wet venting – See CPC Section 908.2 for detailed requirements.

*Trap arm – that portion of a fixture drain that includes the p-trap and extension arm to the vent opening.

**Sewer – that portion of the drainage system outside the home. Drain - is that portion of the drainage system within the home.

TRAP AND TRAP ARM SIZES, LENGTH LIMITATIONS AND FIXTURE DRAINAGE UNITS

FIXTURE	MIN/MAX SIZE TRAP ARM	MAX TRAP ARM LENGTH	DRAINAGE FIXTURE UNIT (DFU)
TOILET	3"	6' VERTICAL+HORIZONTAL	3
BATHTUB	1-1/2" / 2"	1-1/2" – 42" / 2" – 60"	2
SHOWER	2" ONLY	60"	2
LAVATORY	1-1/4" / 1-1/2"	1-1/4" – 36" / 1-1/2" – 42"	1
KITCHEN SINK	1-1/2" / 2"	1-1/2" – 42" / 2" – 60"	2
LAUNDRY SINK	1-1/2" / 2"	1-1/2" – 42" / 2" – 60"	2
WET BAR SINK	1-1/2" / 2"	1-1/2" – 42" / 2" – 60"	1
WASHER STANDPIPE	2" ONLY *	60"	3

*Trap weir must be 6" – 18" above finished floor, standpipe to extend above trap weir 18" – 30"

MAXIMUM DRAINAGE UNITS FOR EACH PIPE SIZE

DRAIN/VENT PIPE	1-1/4"	1-1/2"	2"	3"	4"
VERTICAL DRAINAGE UNITS	1	2 Except sinks	16 No toilets	48	256
HORIZONTAL DRAINAGE UNITS	1	1	8 No toilets	35	216 @ 1/4"/ft 172 @ 1/8"/ft
MAXIMUM VENT UNITS	1	8 No toilets	24	84	256