

TOWN OF ORO VALLEY AMENDMENTS TO THE INTERNATIONAL PLUMBING CODE, 2024 EDITION

The following provision of the International Plumbing Code, 2024 Edition, as published by the International Code Council, Inc., is hereby amended as follows:

CHAPTER 1

Delete **Chapter 1 Administration**, with the exception of **Sections 101.1 and 111**. *(Deleted sections are administered by the 2024 IBC, Chapter 1).*

Revise **Section 101.1 Title**, by replacing [name of jurisdiction] with Town of Oro Valley, AZ.

CHAPTER 3

Revise **Section 305.4.1 Sewer depth**, by replacing [number] with “12” in both locations.

Revise **Section 312.1 Required tests**, by deleting the last two sentences of the paragraph.

Revise **Section 314.2.1.1 Condensate discharge**, by adding the following text at the end of the paragraph:

Condensate discharged to the exterior of a building shall be as follows:

1. At or below grade outside the building in an area capable of absorbing the condensate flow without surface drainage.
2. Over roof drains or gutters or downspouts that connect to drainage pipes, provided they terminate at or above grade in an area capable of absorbing the condensate flow without surface drainage.

CHAPTER 4

Revise **Table 403.1 Minimum number of required plumbing fixtures**, by revising the footnotes section of the table as follows:

e. For business and mercantile classifications with an occupant load of 50 or fewer, service sinks shall not be required.

and add new **footnote “g”** to the table:

g. Drinking fountains are not required for an occupant load of 50 or fewer in all occupancy groups except for A, E, and I occupancies.

Revise **Section 405.3.2 Public lavatories**, by adding an exception as follows:

Exception: Gender neutral restroom configurations that consist of a continuous bank of single user rooms may share lavatories provided the quantity of lavatories is not reduced and the lavatories are located directly outside the single user rooms.

Revise **Section 410.2. Small occupancies**, with the following:

410.2 Small occupancies. Drinking fountains shall not be required for an occupant load of 50 or fewer in all occupancy groups except for A, E, and I occupancies.

Add new **Section 412.13** as follows:

412.13 Automatic faucets. New or replacement faucets serving lavatories in all buildings other than R3 occupancies, individual units in R2 occupancies, or International Residential Code structures shall be provided with automatic faucets in accordance with Table 604.4.

Revise **Section 423.3 Footbaths and pedicure baths**, by adding the following text at the end of the paragraph:

Provide backflow prevention on both the cold and hot water supply to each individual bath.

For tub fill only, provide air gap of three (3) times the diameter of each water inlet or reduced pressure principle backflow prevention assembly or pressure type vacuum breaker installed not less than 12 inches above the flood rim of the bath.

Drainage from each bath shall terminate with an air gap at an indirect waste receptor that includes a floor sink or washer standpipe. Gravity drains from tubs can be directly connected to the waste system through a trap and vent.

CHAPTER 5

Revise **Section 504.6 Requirements for discharge piping**, by deleting item number 2.

Revise **Section 504.7.1 Pan size and drain**, by adding the following text after the second sentence:

A drain shall not be required for replacement water heaters in locations where no previously installed drain is available.

CHAPTER 6

Revise **Table 604.3 Water distribution system design criteria required capacity at fixture supply pipe outlets**, by deleting the column titled "Flow Pressure (psi)" in its entirety.

Revise **SECTION 604.4 Maximum flow and water consumption**, by deleting the Section in its entirety and replace with the following:

Section 604.4 Maximum flow and water consumption. The maximum water consumption flow rates and quantities for all plumbing fixtures and fixture fittings shall be in accordance with Table 604.4 and such fixtures and fixture fittings shall be Environmental Protection Agency (EPA) *Watersense* certified fixtures or within the maximum flow or quantity required of *Watersense* certified fixtures, excluding fixture types that are not included under the *Watersense* program.

Exceptions:

1. Blowout design water closets having a water consumption not greater than 3 ½ gallons (13L) per flushing cycle.
2. Vegetable sprays.
3. Clinical sinks having a water consumption not greater than 4 ½ gallons (17L) per flushing cycle.
4. Service sinks.
5. Emergency showers.
6. Replacement of existing fixtures that do not require a permit.

Revise **Table 604.4 Maximum Flow Rates and Consumption for Plumbing Fixtures and Fixture Fittings**, as follows:

**TABLE 604.4
MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND
FIXTURE FITTINGS**

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY ^b
Lavatory, private	1.5 gpm at 60 psi
Lavatory, public (metering)	0.25 gallon per metering cycle
Lavatory, public (other than metering)	0.5 gpm at 60 psi
Shower head ^{a, c}	2.5 gpm at 80 psi
Sink faucet	1.8 gpm at 80 psi
Urinal	0.5 gallon per flushing cycle
Water closet	1.28 gallons per flushing cycle

For SI: 1 gallon = 3.785 L, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. A hand-held shower spray is a shower head.

b. Consumption tolerances shall be determined from referenced standards.

c. Shower heads shall comply with all requirements for high-efficiency showerheads in ASME A112.18.1-2020/CSA B125.1.

Revise **Section 608.17.4 Connections to automatic fire sprinkler systems and standpipe systems**, by deleting all text and replacing it with the following:

The potable water supply to automatic fire sprinkler and standpipe systems shall be protected against backflow. All backflow prevention equipment shall be installed, inspected and maintained in accordance with ARS § 37-1388

Revise **Sub-Section 608.17.4.1 Additives or nonpotable source**, by deleting all text and replacing it with the following:

The potable water supply to automatic fire sprinkler and standpipe systems shall be protected against backflow. All backflow prevention equipment shall be installed, inspected and maintained in accordance with ARS § 37-1388

Revise **Section 609.6 Clinical, hydrotherapeutic and radiological equipment**, by adding a second sentence as follows:

If water is used for cooling or heat removal, it shall comply with the International Mechanical Code, amended Section 932.1.

CHAPTER 7

Revise **Section 714.1 Sewage backflow**, by deleting the paragraph in its entirety and adding new text as follows:

Where the finish floor elevation is less than 12 inches above the elevation of the next upstream manhole cover in the sewer, a backwater valve shall be installed in the building drain or branch of the building drain serving that floor. Floors discharging from above that reference point shall not discharge through the same back water valve. *(Leave exception unchanged)*

Exception: In existing buildings, fixtures above the elevation of the manhole cover of the next upstream manhole in the public *sewer* shall not be prohibited from discharging through a backwater valve.

CHAPTER 9

Revise **Section 903.1.1 Roof extension unprotected**, by replacing [number] with “6” inches.

CHAPTER 10

Revise **Section 1003.2 Approval**, by adding the following text at the end of the last sentence:

Unless the flow rate is 50 gpm or greater and the liquid capacity is at least 65 gallons.

Delete **Section 1003.3 Grease interceptors**, and **Table 1003.3.5.1** and replace with the following:

Hydromechanical and gravity grease interceptors shall be designed and installed per Industrial Wastewater Ordinance by Pima County Regional Wastewater Reclamation Department Industrial Wastewater Control Section, Article XIV Grease Management Program

A Fixtures to be connected to a grease interceptor located within the kitchen area or subject to grease waste¹:

- Pre-rinse and or pre-wash sinks;
- Two or three compartment sinks;
- Meat prep sink;
- Wok stoves;
- Self cleaning stove ventilation/exhaust hood;
- Kitchen floor drains;
- Floor sinks;
- Mop sinks;
- Food prep sinks;
- Hand sinks²;
- Dishwasher; and
- Food waste disposal units³.

¹ Depending on use and context, the requirement for above listed fixtures to drain through an interceptor may be appealed to RWRD.

² A hand wash sink located in the kitchen area shall either discharge through a grease interceptor or have a sign posted above it stating: “Handwash sink only! No food preparation or dishwashing allowed.”

³Discharges from food waste disposal units must drain through a minimum 3/8 inch screen.

B1 Hydromechanical grease interceptors.

Hydromechanical grease interceptors (HGI) manufactured and designed per PDI G101, which are generally installed inside, may be used when there are four (4) or fewer fixtures. The minimum size HGI to be installed shall be rated no smaller than 25 gallon per minute with a 50-pound grease capacity. Flow control devices shall be designed and installed so that the total flow through such devices shall at no time be greater than the rated flow of the HGI.

Exception: dishwasher and food waste disposal units shall not drain through a hydromechanical grease interceptor.

B2 Hydromechanical grease interceptors meeting ASME A112.14.3.

Hydromechanical grease interceptors (HGI) manufactured, designed, and certified to ASME A112.14.3 for grease production sizing and flow rate shall be installed per manufacturer’s requirements.

C Grease interceptor sizing criteria

Gravity grease interceptor (GGI) shall be sized in accordance with table and formula below.

Drainage Fixture Units per Table defined in Pima County Industrial Wastewater Ordinance 13.36.420 (C)	Minimum size (gallons)
Up to 10 DFU	300
11-16 DFU	500
17-25 DFU	750
26-33 DFU	1,000
34-44 DFU	1250
45-66 DFU	1500
67-111 DFU	2000
Greater than 112 DFU	Contact Industrial Wastewater Control

$$V_{(min)} = F \times R \times S$$

Where:

- $V_{(min)}$ = minimum gravity grease interceptor operating volume, gallons
- F = flow rate (maximum), gallons per minute
- R = retention time = 30 minutes
- S = storage factor = 25%

$$\text{Thus: } V_{(min)} = F \times 30 \times 1.25$$

The flow rate shall be determined based on the total flow rate from all equipment and plumbing fixtures connected to the gravity grease interceptor using one of the following equations:

- Drainage fixture units (dfu) **less than or equal to 40**: $f = (0.8 \times \text{dfu})$
- Drainage fixture units **greater than 40**: $f = (0.3 \times \text{dfu}) + 20$

Where: dfu = drainage fixture units per Table 709.1

- The minimum retention time of 30 minutes is based on Wastewater Engineering, Treatment, Disposal and Reuse, Third Edition, Metcalf and Eddy, Inc., McGraw-Hill, Inc., page 1028.
- A minimum of **25%** storage is required for floatable fats, oil and grease and settled solids is required for gravity grease interceptors.
- The minimum sized GGI to be installed shall be 300 gallons.

Note: Providing additional interceptor capacity can reduce an interceptor's maintenance frequency. However, solid accumulation and low flows in an interceptor can, over an extended period of time, produce a corrosive environment which can damage the structural integrity of the interceptor. An oversized interceptor may also generate odor problems.

Gravity grease interceptors shall be designed and tested in accordance with IAPM/ANSI Z1001. GGIS shall be installed per manufacturer's instructions. Where manufacturer's instructions are not provided, GGIS shall be installed in compliance with ASME A112.14.6 and IAPMO/ANSI Z1001.

Grease interceptors shall have a minimum of two compartments and two man-ways. All man-ways shall have a minimum 20" inside diameter.

Grease interceptor discharge shall be vented in accordance with Chapter 9, provided with cleanout in accordance with Section 708, and directly connected to the sanitary drainage system.

CHAPTER 11

Section 1101.3 Prohibited drainage. Revise the section by adding the following exception:

Exception: Exterior fixtures, installed to prevent drainage outside the fixture or pan are acceptable.

CHAPTER 13

Section 1302 On-site non-potable water reuse systems. Delete section and replace with the following:

Regulated under Arizona Administrative Code (A.A.C.) Title 18, Chapter 9.
See also 2024 IRC Section P2601.2.1 Gray Water Piping Optional. Note:

Appendix B Rates of rainfall for various cities. Revise appendix by adding "Tucson...3.0" under "Arizona".