**SECTION 709 FIXTURE UNITS

709.1 Values for fixtures.**  *Drainage fixture unit* values as given in Table 709.1 designate the relative load weight of different kinds of fixtures that shall be employed in estimating the total load carried by a soil or waste pipe, and shall be used in connection with Tables 710.1(1) and 710.1(2) of sizes for soil, waste and vent pipes for which the permissible load is given in terms of fixture units.  **TABLE 709.1 DRAINAGE FIXTURE UNITS FOR FIXTURES AND GROUPS**

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| **FIXTURE TYPE**  | **DRAINAGE FIXTURE UNIT VALUE AS LOAD FACTORS**  | **MINIMUM SIZE OF TRAP(inches)**  |
| Automatic clothes washers, commerciala,g  | 3 | 2 |
| Automatic clothes washers, residentialg  | 2 | 2 |
| Bathroom group as defined in Section 202(1.6 gpf water closet)f  | 5 | — |
| Bathroom group as defined in Section 202(water closet flushing greater than 1.6 gpf)f  | 6 | — |
| Bathtubb (with or without overhead shower or whirpool attachments) | 2 | 11 /2  |
| Bidet | 1 | 11 /4  |
| Combination sink and tray | 2 | 11 /2  |
| Dental lavatory | 1 | 11 /4  |
| Dental unit or cuspidor | 1 | 11 /4  |
| Dishwashing machinec,domestic | 2 | 11 /2  |
| Drinking fountain | 1 /2  | 11 /4  |
| Emergency floor drain | 0 | 2 |
| Floor drainsh  | 2h | 2 |
| Floor sinks | Note h | 2 |
| Kitchen sink, domestic | 2 | 11/2  |
| Kitchen sink, domestic with food waste grinder and/or dishwasher | 2 | 11/2  |
| Laundry tray (1 or 2 compartments) | 2 | 11/2  |
| Lavatory | 1 | 11/4  |
| Shower (based on the total flow rate through showerheads and body sprays) |  |  |
| Flow rate: |  |  |
|   5.7 gpm or less | 2 | 11/2  |
|   Greater than 5.7 gpm to 12.3 gpm | 3 | 2 |
|   Greater than 12.3 gpm to 25.8 gpm | 5 | 3 |
|   Greater than 25.8 gpm to 55.6 gpm | 6 | 4 |
| Service sink | 2 | 11/2  |
| Sink | 2 | 11/2  |
| Urinal | 4 | Note d |
| Urinal, 1 gallon per flush or less | 2e  | Note d |
| Urinal, nonwater supplied | 1/2  | Note d |
| Wash sink (circular or multiple) each set of faucets | 2 | 11/2  |
| Water closet, flushometer tank, public or private | 4e  | Note d |
| Water closet, private (1.6 gpf) | 3e  | Note d |
| Water closet, private (flushing greater than 1.6 gpf) | 4e  | Note d |
| Water closet, public (1.6 gpf) | 4e  | Note d |
| Water closet, public (flushing greater than 1.6 gpf) | 6e  | Note d |

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| For SI: 1 inch = 25.4 mm, 1 gallon = 3.785 L, gpf = gallon per flushing cycle, gpm = gallon per minute. |
| a. For traps larger than 3 inches, use Table 709.2. |
| b. A showerhead over a bathtub or whirlpool bathtub attachment does not increase the drainage fixture unit value. |
| c. See Sections 709.2 through 709.4.1 for methods of computing unit value of fixtures not listed in this table or for rating of devices with intermittent flows. |
| d. Trap size shall be consistent with the fixture outlet size. |
| e. For the purpose of computing loads on building drains and sewers, water closets and urinals shall not be rated at a lower drainage fixture unit unless the lower values are confirmed by testing. |
| f. For fixtures added to a bathroom group, add the dfu value of those additional fixtures to the bathroom group fixture count. |
| g. See Section 406.3 for sizing requirements for fixture drain, branch drain, and drainage stack for an automatic clothes washer standpipe. |
| h. See Sections 709.4 and 709.4.1. |

 **709.2 Fixtures not listed in Table 709.1.**
Fixtures not listed in Table 709.1 shall have a *drainage fixture unit* load based on the outlet size of the fixture in accordance with Table 709.2. The minimum trap size for unlisted fixtures shall be the size of the drainage outlet but not less than 11/4 inches (32 mm).  **TABLE 709.2 DRAINAGE FIXTURE UNITS FOR FIXTURE DRAINS OR TRAPS**

|  |  |
| --- | --- |
| **FIXTURE DRAIN OR TRAP SIZE (inches)**  | **DRAINAGE FIXTURE UNIT VALUE**  |
| 11/4  | 1 |
| 11/2  | 2 |
| 2 | 3 |
| 21/2  | 4 |
| 3 | 5 |
| 4 | 6 |

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| For SI: 1 inch = 25.4 mm. |

 **709.3 Values for continuous and semicontinuous flow.**  *Drainage fixture unit* values for continuous and semicontinuous flow into a drainage system shall be computed on the basis that 1 gpm (0.06 L/s) of flow is equivalent to two fixture units.  **709.4 Values for indirect waste receptor.**
The *drainage fixture unit* load of an indirect waste receptor receiving the discharge of indirectly connected fixtures shall be the sum of the *drainage fixture unit* values of the fixtures that discharge to the receptor, but not less than the *drainage fixture unit* value given for the indirect waste receptor in Table 709.1 or 709.2.

**709.4.1 Clear-water waste receptors.**
Where waste receptors such as floor drains, floor sinks and hub drains receive only clear-water waste from display cases, refrigerated display cases, ice bins, coolers and freezers, such receptors shall have a *drainage fixture unit* value of one-half.