

**77 ILLINOIS ADMINISTRATIVE CODE, PART 890**  
**ILLINOIS PLUMBING CODE (02/04)**

**Section 890.APPENDEX A**

**PLUMBING MATERIALS, EQUIPMENT, USE  
RESTRICTIONS AND APPLICABLE STANDARDS**

**Table M Load Values Assigned to Fixtures**

**Load Values Assigned to Fixtures**

| Fixture                 | Occupancy      | Type of Supply Control | Load Values In Water (Supply Fixture Units) |      |       |
|-------------------------|----------------|------------------------|---|------|-------|
|                         |                |                        | Cold  | Hot  | Total |
| Water Closet            | Public         | Flush Valve            | 10  | --   | 10    |
| Water Closet            | Public         | Flush Tank             | 5   | --   | 5     |
| Urinal                  | Public         | 1" Flush Valve         | 10  | --   | 10    |
| Urinal                  | Public         | 3/4" Flush Valve       | 5   | --   | 5     |
| Urinal                  | Public         | Flush Tank             | 3   | --   | 3     |
| Lavatory                | Public         | Faucet                 | 1.5   | 1.5  | 2     |
| Bathtub                 | Public         | Faucet                 | 3   | 3    | 4     |
| Shower Head             | Public         | Mixing Valve           | 3   | 3    | 4     |
| Service Sink            | Offices, etc.  | Faucet                 | 2.25  | 2.25 | 3     |
| Kitchen Sink            | Hotel/Restaur. | Faucet                 | 3   | 3    | 4     |
| Drinking Fountain       | Office, etc.   | 3/8" Valve             | 0.25  | --   | 0.25  |
| Water Closet            | Private        | Flush Valve            | 6   | --   | 6     |
| Water Closet            | Private        | Flush Tank             | 3   | --   | 3     |
| Lavatory                | Private        | Faucet                 | 0.75  | 0.75 | 1     |
| Bathtub                 | Private        | Faucet                 | 1.5   | 1.5  | 2     |
| Shower Stall            | Private        | Mixing Valve           | 1.5   | 1.5  | 2     |
| Kitchen Sink            | Private        | Faucet                 | 1.5   | 1.5  | 2     |
| Laundry Trays (1 to 3)  | Private        | Faucet                 | 2.25  | 2.25 | 3     |
| Combination Fixture     | Private        | Faucet                 | 2.25  | 2.25 | 3     |
| Dishwashing Machine     | Private        | Automatic              | --  | 1    | 1     |
| Laundry Machine (8 lb)  | Private        | Automatic              | 1.5   | 1.5  | 2     |
| Laundry Machine (8 lb)  | Public/General | Automatic              | 2.25  | 2.25 | 3     |
| Laundry Machine (16 lb) | Public/General | Automatic              | 3   | 3    | 4     |

**Note:** For fixtures not listed, loads shall be assumed by comparing the fixtures to one listed using water in similar quantities and at similar rates. The assigned loads for fixtures with both cold and hot water supplies are given for separate cold and hot water loads and for total load.

Where a unit of local government or the community public water supply does not require separate water service lines for irrigation or similar systems that are likely to impose continuous demands (e.g., lawn sprinkler or air conditioning systems), the following rule applies: estimate the continuous demand (in gallons per minute) for such outlets/systems separately from the intermittent demand from the above fixtures, and add this amount to the demand of the fixtures (in gallons per minute).

Fire sprinkler systems are exempt from this table.

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**Table N Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flush Tanks**

**Water Supply Fixture Units (W.S.F.U.) for a  
Supply System with Flush Tanks**

| <b>W.S.F.U.</b> | <b>Demand (GPM)</b> | <b>Pipe Size (Inches)</b> | <b>Pressure Loss (PSI/100' of Pipe)</b> | <b>Velocity (Ft./Sec.)</b> | <b>Meter Size (Inches)</b> |
|-----------------|---------------------|---------------------------|---|----------------------------|----------------------------|
| 2               | 2                   | 1/2"                      | 4.2                                     | 2.7                        | 5/8"                       |
| 4               | 3                   | 1/2"                      | 8.7                                     | 4.2                        | 5/8"                       |
| 6               | 5                   | 1/2"                      | 22.5                                    | 7.0                        | 5/8"                       |
| 8               | 6.5                 | 3/4"                      | 6.3                                     | 4.3                        | 5/8"                       |
| 10              | 8                   | 3/4"                      | 9.0                                     | 5.4                        | 3/4"                       |
| 12              | 9.2                 | 3/4"                      | 11.5                                    | 6.1                        | 3/4"                       |
| 14              | 10.4                | 3/4"                      | 15.0                                    | 6.9                        | 3/4"                       |
| 16              | 11.6                | 3/4"                      | 18.0                                    | 7.7                        | 3/4"                       |
| 20              | 14                  | 1"                        | 7.2                                     | 5.6                        | 3/4"                       |
| 25              | 17                  | 1"                        | 10.0                                    | 6.6                        | 3/4"                       |
| 30              | 20                  | 1"                        | 13.6                                    | 8.0                        | 1"                         |
| 35              | 22.5                | 1 1/4"                    | 5.8                                     | 5.7                        | 1"                         |
| 40              | 25                  | 1 1/4"                    | 7.0                                     | 6.3                        | 1"                         |
| 45              | 27                  | 1 1/4"                    | 8.2                                     | 6.9                        | 1"                         |
| 50              | 29                  | 1 1/4"                    | 9.5                                     | 7.4                        | 1"                         |
| 60              | 32                  | 1 1/2"                    | 5.0                                     | 5.8                        | 1 1/2"                     |
| 70              | 35                  | 1 1/2"                    | 6.2                                     | 6.4                        | 1 1/2"                     |
| 80              | 38                  | 1 1/2"                    | 7.0                                     | 7.2                        | 1 1/2"                     |
| 90              | 41                  | 1 1/2"                    | 8.0                                     | 7.5                        | 1 1/2"                     |
| 100             | 43.5                | 1 1/2"                    | 8.7                                     | 7.8                        | 2"                         |
| 120             | 48                  | 2"                        | 2.7                                     | 5.0                        | 2"                         |
| 140             | 52.5                | 2"                        | 3.1                                     | 5.4                        | 2"                         |
| 160             | 57                  | 2"                        | 3.6                                     | 5.8                        | 2"                         |
| 180             | 61                  | 2"                        | 3.9                                     | 6.1                        | 2"                         |
| 200             | 65                  | 2"                        | 4.5                                     | 6.6                        | 2"                         |
| 225             | 70                  | 2"                        | 5.2                                     | 7.1                        | 2"                         |
| 250             | 75                  | 2"                        | 6.0                                     | 7.7                        | 3"                         |
| 275             | 80                  | 2 1/2"                    | 2.6                                     | 5.5                        | 3"                         |
| 300             | 85                  | 2 1/2"                    | 2.9                                     | 5.8                        | 3"                         |
| 350             | 95                  | 2 1/2"                    | 3.5                                     | 6.5                        | 3"                         |
| 400             | 105                 | 2 1/2"                    | 4.2                                     | 7.1                        | 3"                         |
| 450             | 115                 | 2 1/2"                    | 5.0                                     | 8.0                        | 3"                         |
| 500             | 125                 | 3"                        | 2.3                                     | 5.9                        | 3"                         |
| 600             | 145                 | 3"                        | 3.1                                     | 6.8                        | 4"                         |
| 750             | 170                 | 3"                        | 4.0                                     | 8.0                        | 4"                         |
| 1000            | 208                 | 4"                        | 1.5                                     | 5.7                        | 4"                         |
| 1250            | 240                 | 4"                        | 1.9                                     | 6.4                        | 4"                         |
| 1500            | 267                 | 4"                        | 2.3                                     | 7.0                        | 4"                         |
| 1750            | 294                 | 4"                        | 2.8                                     | 7.8                        | 4"                         |
| 2000            | 320                 | 6"                        | 0.36                                    | 3.7                        | 6"                         |

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**Table N Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flush Tanks**

**Water Supply Fixture Units (W.S.F.U.) for a  
Supply System with Flush Tanks (Continued)**

**Agency Notes:** Where a unit of local government or the community public water supply does not require separate water service lines for irrigation or similar systems that are likely to impose continuous demands (e.g., lawn sprinkler or air conditioning systems), the following rule applies: estimate the continuous demand (in gallons per minute) for such outlets/systems separately from the intermittent demand from the above fixtures, and add this amount to the demand of the fixtures (in gallons per minutes).

Meter and meter yoke sizes shown in this table shall apply only to those jurisdictions or governmental units where local ordinances or community public water supply requirements do not prescribe specific sizes of meters and/or meter yokes. Where local ordinances or community public water supply requirements cover such sizing, those requirements shall be followed.

(Source: Amended at 28 Ill. Reg. 4215, effective February 18, 2004)

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**Table O Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flushometer**

**Water Supply Fixture Units (W.S.F.U.) for a  
Supply System with Flushometer**

| <b>W.S.F.U.</b> | <b>Demand (GPM)</b> | <b>Pipe Size (Inches)</b> | <b>Pressure Loss (PSI/100' of Pipe)</b> | <b>Velocity (Ft./Sec.)</b> | <b>Meter Size (Inches)</b> |
|-----------------|---------------------|---------------------------|---|----------------------------|----------------------------|
| 10              | 27                  | 1 1/4"                    | 8.3                                     | 6.8                        | 3/4"                       |
| 12              | 28.6                | 1 1/4"                    | 9.2                                     | 7.2                        | 3/4"                       |
| 14              | 30.2                | 1 1/4"                    | 10.0                                    | 7.9                        | 3/4"                       |
| 16              | 31.8                | 1 1/4"                    | 11.0                                    | 8.0                        | 3/4"                       |
| 20              | 35                  | 1 1/2"                    | 6.0                                     | 6.4                        | 3/4"                       |
| 25              | 38                  | 1 1/2"                    | 7.0                                     | 6.9                        | 1"                         |
| 30              | 41                  | 1 1/2"                    | 8.0                                     | 7.4                        | 1"                         |
| 35              | 43.8                | 1 1/2"                    | 8.8                                     | 8.0                        | 1"                         |
| 40              | 46.5                | 2"                        | 2.5                                     | 4.7                        | 1"                         |
| 45              | 49                  | 2"                        | 2.7                                     | 5.1                        | 1"                         |
| 50              | 51.5                | 2"                        | 2.9                                     | 5.4                        | 1 1/2"                     |
| 60              | 55                  | 2"                        | 3.4                                     | 5.8                        | 1 1/2"                     |
| 70              | 58.5                | 2"                        | 3.7                                     | 6.0                        | 1 1/2"                     |
| 80              | 62                  | 2"                        | 4.0                                     | 6.2                        | 1 1/2"                     |
| 90              | 64.8                | 2"                        | 4.6                                     | 6.5                        | 1 1/2"                     |
| 100             | 67.5                | 2"                        | 5.0                                     | 6.8                        | 1 1/2"                     |
| 120             | 72.5                | 2"                        | 5.6                                     | 7.2                        | 2"                         |
| 140             | 77.5                | 2"                        | 6.3                                     | 8.0                        | 2"                         |
| 160             | 82.5                | 2 1/2"                    | 2.7                                     | 5.7                        | 2"                         |
| 180             | 87                  | 2 1/2"                    | 3.0                                     | 6.1                        | 2"                         |
| 200             | 91.5                | 2 1/2"                    | 3.4                                     | 6.4                        | 2"                         |
| 225             | 97                  | 2 1/2"                    | 3.7                                     | 6.8                        | 2"                         |
| 250             | 101                 | 2 1/2"                    | 4.0                                     | 7.1                        | 3"                         |
| 275             | 106                 | 2 1/2"                    | 4.2                                     | 7.3                        | 3"                         |
| 300             | 110                 | 2 1/2"                    | 4.6                                     | 7.6                        | 3"                         |
| 350             | 119                 | 3"                        | 2.1                                     | 5.5                        | 3"                         |
| 400             | 126                 | 3"                        | 2.3                                     | 5.9                        | 3"                         |
| 450             | 138                 | 3"                        | 2.7                                     | 6.3                        | 3"                         |
| 500             | 145                 | 3"                        | 3.0                                     | 6.8                        | 3"                         |
| 600             | 160                 | 3"                        | 3.6                                     | 7.4                        | 4"                         |
| 750             | 178                 | 4"                        | 1.1                                     | 4.7                        | 4"                         |
| 1000            | 208                 | 4"                        | 1.5                                     | 5.6                        | 4"                         |
| 1250            | 240                 | 4"                        | 1.9                                     | 6.4                        | 4"                         |
| 1500            | 267                 | 4"                        | 2.3                                     | 7.0                        | 4"                         |
| 1750            | 294                 | 4"                        | 2.8                                     | 7.8                        | 4"                         |
| 2000            | 321                 | 6"                        | 0.4                                     | 3.7                        | 6"                         |

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**Water Supply Fixture Units (W.S.F.U.) for a  
Supply System with Flushometer (Continued)**

**Agency Notes:** Where a unit of local government or the community public water supply does not require separate water service lines for irrigation or similar systems that are likely to impose continuous demands (e.g., lawn sprinkler or air conditioning systems), the following rule applies: estimate the continuous demand (in gallons per minute) for such outlets/systems separately from the above intermittent demand from the above fixtures, and add this amount to the demand of the fixtures (in gallons per minute).

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Table P Demand at Individual Water Outlets

**Demand at Individual Water Outlets**

| <b>Type of Outlet</b>                    | <b>Demand (g.p.m.)</b> |
|--|------------------------|
| Ordinary Lavatory Faucet                 | 2.0                    |
| Self Closing Lavatory Faucet             | 2.5                    |
| Sink Faucet, 3/8" or 1/2"                | 4.5                    |
| Sink Faucet, 3/4"                        | 6.0                    |
| Bath Faucet, 1/2"                        | 5.0                    |
| Shower Head, 1/2"                        | 5.0                    |
| Laundry Faucet, 1/2"                     | 5.0                    |
| Ballcock in Water Closet Flush Tank      | 3.0                    |
| 1" Flush Valve (25 psi flow pressure)    | 35.0                   |
| 1" Flush Valve (15 psi flow pressure)    | 27.0                   |
| 3/4" Flush Valve (15 psi flow pressure)  | 15.0                   |
| Drinking Fountain Jet                    | 0.75                   |
| Dishwashing Machine (domestic)           | 4.0                    |
| Laundry Machine (8 to 16 pounds)         | 4.0                    |
| Aspirator (operating room or laboratory) | 2.5                    |

(Source: Amended at 28 Ill. Reg. 4215, effective February 18, 2004)