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| FIRE-WATER CALC WORKSHEET FOR |  |
| (Based upon the Hazen-Williams Formula) NAME/ADDRESS OF PROJECT | NAME/ADDRESS OF PROJECT |

# INFORMATION REQUIRED TO CALCULATE WATER SERVICE SIZE

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | Sprinkler Demand: | |  | 1 Sprinkler (gpm) | |  | 2 Sprinklers (gpm) | Total | | GPM = |
|  | Sprinkler Manufacturer: |  | | | | Model# | | K-Factor: | | |
| 2. | Difference in elevation from main to external pressure tank or to building control valve. | | | | | | | | (feet) | |
| 3. | Size of the water meter when applicable. | | | | Example; 5/8, ¾, 1, 2, 3, 4 | | |  | | |
| 4. | Developed length from main or external pressure tank to building control valve. | | | | | | | (feet) | | |
| 5. | Low pressure at main in street or external pressure tank. | | | | | | | (psig) | | |

# CALCULATE WATER SERVICE PRESSURE LOSS

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6. | Low pressure at main in street or external pressure tank. (value of #5 above) | | | | | | | |  | |
| 7. | Water service diameter is |  | Material is | |  | Pressure loss per 100 ft =       psi | | | | |
|  | X       (decimal equivalent of service length, i.e. 65 ft = 0.65) | | | | | |  | | |  |
|  |  | | | (Subtract line 7. From line 6.) | | | | subtotal | |  |
| 8. | Determine pressure gain or loss due to elevation. (multiply the value of #2 above by 0.434) | | | | | | | Value of “8” | |  |
| 9. | Available pressure after the bldg. Control valve. | | | | (subtract or add line 8. Enter in "B".) | | | **subtotal** | |  |

**CALCULATE THE PRESSURE AVAILABLE FOR UNIFORM LOSS (VALUE OF "A")**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| B. | Available pressure after the building control valve. (from "9" above) | | | | | value of "B” | | |  |
| C. | Pressure loss of water meter. (when meter is required or installed) | | | | | value of "C” | | |  |
|  | (subtract line C. From B.) | | | | | | **subtotal** | |  |
| D. | Pressure at controlling sprinkler(s). | | | | | | value of "D” | |  |
|  | (controlling sprinkler(s) is      ) | | | | | |  | |  |
|  | (subtract the value of D.) | | | | | | **subtotal** | |  |
| E. | Difference in elevation between the building control valve and the controlling sprinkler(s) in feet; | | | | | | | |  |
|  | X 0.434 psi/ft. | | Value of “E” | | | | | |  |
|  | (subtract the value of E.) | | | | | | **subtotal** | |  |
| F. | Pressure loss due to water treatment devices, instantaneous water heaters and backflow preventers | | | | | | | |  |
|  | which serve the controlling fixture | | | Value of “F” | | | | |  |
|  | Pressure loss due to | | | (subtract the value of F) | | | subtotal | |  |
| G. | Developed length from building control valve to controlling sprinkler in feet | | | X 1.5 | | | Value of “G” | |  |
|  |  | | | (divide by the value of G.) | | | | **subtotal** |  |
|  | (Note: Excessive number of fittings refer to material fitting pressure loss tables) | | | | | | | |  |
|  |  | Water distribution piping material is: | | | | | | | |
|  |  |  | | | (multiply by 100) | | | | 100 |
| A. | Pressure available for uniform loss | | | | **“A” =** | | | |  |

Comments

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SBD-10860 (R10/14)