



FIRE LINE / DOMESTIC / IRRIGATION CONNECTION DEMAND FORM

Date: _____ Name: _____ Project Tracker ID (if applicable): _____

Property Address: _____
Name of Building or Business: _____
Legal Description: _____
Property use: [] Commercial [] Multi-family (total units _____) [] Mix use* [] Irrigation only
(units to be sprinkled _____) (Commercial & Multi-family) (Section 4)

FIRE LINE DEMAND DATA - all sizes View sheet 3 for recommended flow capacities per size
of square feet to be sprinkled: _____ # of stories to be sprinkled: _____
Required sprinkler flow: _____ gpm Requested size: _____
Required residual pressure: _____ psi
Name of the street where the main is to be tapped is: _____

DOMESTIC ONLY DEMAND DATA - all sizes View sheet 2 for meter capacities
Tap size requested: _____ Domestic maximum load: _____ gpm
* For mixed use only, please provide the following: Commercial area: _____ square feet
If this tap will also serve irrigation, please provide the following:
Area of irrigation only: _____ square feet Irrigation maximum load: _____ gpm
Concurrent irrigation/domestic use: [] yes [] no
Name of the street where the main is to be tapped is: _____

IRRIGATION DEMAND DATA - use this section only if irrigation will be served by its own separate tap
View sheet 2 for meter capacities
Tap size: _____ Area of irrigation only: _____ square feet
Maximum load: _____ gpm
If the area of irrigation is over 43,560 s.f., refer to denverwater.org/DoingBusinesswithUs/PlanReviews/IrrigationPlanSubmittal/
Name of the street where the main is to be tapped is: _____

For questions, please contact Sales Administration @ 303-628-6100

Guidelines for Service Line And Meter Capacities

Service Flows From DWD Internal Study of Various Code Capacities
 Meter Flows From AWWA Manual M-22
 updated 5/25/16 AJC

Tap/Meter/Service Sizing

Maximum DW rated Velocity is 10 ft/sec

Diameter	Maximum Flow @ Velocity 10 ft/sec(1,2,5)	High Normal/Max Peak Meter Flows (3)			Associated BFP Diameter @ 10 ft/sec
		Meter Type			
		Displacement	Turbine Class II	Compound	
3/4"	14	15/30			1"
1"	24	25/50			1 1/4"
1.5"(4)	55	50/100	80/120		2"
2"	98	80/160	100/160	80/160	2 1/2"
3"	220		240/350	160/320	4"
4"	391		420/630	250/500	6"
6"	881		920/1400	500/1000	8"
8"	1566		1600/2400	800/1600	10"
10"	2447		2500/3800		12"

All flows in gallons per minute (gpm)

- (1) Uniform Plumbing Code A 6.1: Velocities shall not exceed 10 ft/sec
 AWWA Manual M-22, Appendix C: "recommended that the maximum water Velocity in the service be not more than 10 f/s"
- (2) International Plumbing Code Figure E103.3(2): Fluid velocities in excess of 5 to 8 ft/sec are not usually recommended
- (3) AWWA Manual M-22 Table 6.1
- (4) Only Badger meters are manufacturer rated to deliver in excess of 50 gpm for 1 1/2"
- (5) AWWA Manual M-22 Chapter 5: "Velocities greater than 10 ft/sec should be avoided"

Backflow Preventer Sizing

Maximum rated Velocity is 7.5 ft/sec

Diameter Inches	BFP Maximum	Meter/Service Maximum (1)	IPC Low Maximum (2)	IPC High Maximum (2)	Velocity in ft/sec
	7.5	10	5	8	
0.75	10.3	13.8	6.9	11.0	Flows in gpm
1.00	18.4	24.5	12.2	19.6	
1.25	28.7	38.2	19.1	30.6	
1.50	41.3	55.1	27.5	44.0	
2.00	73.4	97.9	48.9	78.3	
2.50	114.7	152.9	76.5	122.3	
3.00	165.2	220.2	110.1	176.2	
4.00	293.6	391.5	195.7	313.2	
6.00	660.6	880.8	440.4	704.7	
8.00	1174.4	1565.9	783.0	1252.7	
10.00	1835.1	2446.7	1223.4	1957.4	

Recommended Flow Capacity for Automatic Sprinkler Connection Taps:

Diameter Inches	Flow @ 15 fps (1)	Flow @ 20 fps (2)	Allowed Combination Domestic Tap Sizes at >= 4:1 Ratio or < 8:1 Ratio (ASC:DOM)	
3/4"	20.65 gpm	28 gpm	NA	
1"	36.71 gpm	49 gpm	NA	
1 1/2"	82.60 gpm	110 gpm	NA	
2"	146.85 gpm	195 gpm	NA	
3"	330.42 gpm	441 gpm	NA	(3" tapping saddle is not available)
4"	587.41 gpm	780 gpm	3/4"	1"
6"	1,321.67 gpm	1,760 gpm	1"	1 1/2"
8"	2,349.64 gpm	3,140 gpm	1 1/2"	2"
10"	3,671.31 gpm	4,895 gpm	1 1/2"	2"
12"	5,286.69 gpm	7050 gpm	2"	3"

- (1) From NFPA 20 Section A-2-9.4, ASC systems w/fire pump, 15 fps maximum
- (2) Maximum recommended flow velocity w/o fire pump is 20 fps