## Cheatography

## Mechanical Systems Cheat Sheet

by jswans33 via cheatography.com/29703/cs/8765/

MAX GPM			
*PIPE SIZE8	5 FPS	8 FPS	10 FPS
1/2"	4.5	6	8
3/4"	8	13	18
1"	16	20	29
1-1/4"	22	30	43
1-1/2"	28	40	55
2"	48	70	95
2-1/2"	73	105	150
3"	110	160	205

MAX SFU			
*PIPE SIZE8	5 FPS	8 FPS	10 FPS
1/2"	1.0	3	4
3/4"	4	9	16
1"	12	23	47
1-1/4"	27	55	95
1-1/2"	47	85	144
2"	120	225	350
2-1/2"	230	400	600
3"	525	680	980

906.1 FIXTURE VENTS		
SIZE OF TRAP	SLOPE /FOOT	DISTANCE FROM TRAP
1-1/4"	1/4"	5
1-1/2"	1/4"	6
2"	1/4"	8
3"	1/8"	12
4"	1/8"	16

RPBP Relief Valves	
Size of RPBP	Required Floor drain size
2"	55 GPM
3"	112 GPM
4"	170 GPM
5"	350 GPM
6"	450 GPM

Denver Sand Oil Intercept Sizing	
(1) Cubic Foot	of interceptor Capacity:
100 sf of floor space:	Machine shops/ auto repair
250 sf of floor space	paint spray booths
2000 sf of floor space	car garage w/ washed floors
3000 sf of floor space	parking garage where tenants cars are washed
4000 sf of floor space	parking garage with no water outlets
Use Copeland	100 Gal/200 Gal concrete

Grease interceptor sizing		
<b>Capacity</b> = [2.5] x [2.0] x [CUF] x		
[Seating Count]		
Gallons per customer = 2		
Turn over rate = 2.5		
Seating Capacity = architects		
seating count, NOT OCCUPANCY		
COUNT.		

Cubic Usage factor= counting fixtures ONLY IN KITCHEN, connected ONLY TO GREASE.

Starting CUF = 2.25

blocks for use.

Additional Fixtures have a factor of 0.25 CUF Appliances have a factor of 0.5 CUF: stove(s)/griddle(s),3 comp or 2 comp sink,oven(s),Pot Sink,broiler(s),Mop Sink, fryer(s),Floor Sink,wok(s),Hand Sink, Garbage Disposal,Dishwasher

- Must include sanitary Tee's from Denver standards. Copeland sheet does not include.
- Combine vents in building at 42" AFF and route thru roof
- If total vent length >40', increase vent size from 2" to 3"
- Coordinate location w/ civil engineer. They will need capacity, location, and vent routing.
- Include Denver standard and GI dimensions on drawing in interceptor detail.
- Core & Shell Retail 1000 Gal / restaurant tenant space

IPC Fixture Values	- Private		
FIXTURE	COLD	нот	TOTAL
BRG	2.7	1.5	3.6
Bathtub	1.0	1.0	1.4
Dish Machine		1.4	1.4
Kitchen Sink	1.0	1.0	1.4
Lavatory	0.5	0.5	0.7
Shower Head	1.0	1.0	1.4
8lb washing machine	1.0	1.0	1.4
WC -tank	2.2		2.2
WC - Flushmeter	2.0		2.0

AWWA (2nd ed) Fixture Values (gpm)	
Toilet (Flush) - 4	Urinal (wall) - 16
Toilet (Flush Valve) - 35	Shower - 2.5
Shower - 2.5	Lavatory - 1.5
Kitchen Sink - 2.2	Utility Sink - 4
Dish Washer - 2	CWSW- 6
1/2" hosebib - 5	5/8" hosebib - 9
Pressure adjustments:	

Pressure adjustments:
50 PSI - 0.9
60 PSI - 1.0
70 PSI - 1.09
80 PSI - 1.17
90 PSI - 1.25

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