

RECOMMENDATIONS FOR SIZING HORIZONTAL FINAL PIPEWORK

To simplify your work, here are DELABIE's recommendations for selecting the correct pipe size (table 1), suitable for:

- Sanitary fittings in public buildings with high simultaneous demand.
- Horizontal pipe runs.
Design velocity 1.5 - 2m/sec.
If Design velocity < 1m/sec.,
(see the *Darius Abacus* chart page 247).

For rising and falling pipework, follow the classic plumbing calculation methods.
In all other cases use our CALCULATION GUIDE (see page 246).

TABLE 1 / PIPEWORK DIAMETER RELATIVE TO THE NUMBER OF TIME FLOW TAPS/VALVES
Horizontal pipe runs - Design velocity 1.5 m/sec. (2 m/sec. max.)

Time flow valve	No. Time flow valves on the same pipe run	FLOW RATE		PIPES		Minimum dynamic pressure for single tap, bar
		Gross Flow Rate L/sec.	Design corrected L/sec.	Plastic pipes Int. Ø	Copper pipes Int. Ø	
BASIN Base Flow Rate= 0.1 L/sec. (x 7 seconds)	1	0.10	0.10	12	12/14	0.50
	2 or 3	0.20 - 0.30	0.20 - 0.30	12	14/16	
	3 or 4	0.30 or 0.40	0.30 - 0.40	16	16/18	
	5 - 10	0.50 - 1	0.50 - 0.66	20	20/22	
	10 - 15	1 - 1.50	0.66 - 0.79	25	26/28	
	15 - 35	1.50 - 3	0.79 - 1.11	32	30/32	
	35 - 70	3.50 - 7	1.19 - 1.62	32		
70 - 100	7.50 - 10	1.74 - 2	40	38/40		
SHOWER Base Flow Rate 0.2 L/sec. (x 30 seconds)	1	0.20	0.20	12	14/16	1
	2	0.40	0.40	16	18/20	
	3 - 5	0.60 - 1	0.60 - 1	25	26/28	
	6 - 20	1.20 - 4	1.07 - 1.83	32		
	20 - 50	4 - 10	1.83 - 2.85	40	38/40	
50 - 100	10 - 20	2.85 - 4	50			
URINAL With water nozzle and stall Base Flow Rate 0.15 L/sec. (x 3 seconds)	1	0.15	0.15	12	12/14	0.50
	2	0.30	0.30	12	14/16	
	3 or 4	0.45 - 0.60	0.45 - 0.60	20	20/22	
	5 - 10	0.75 - 1.50	0.75 - 1	25	26/28	
	10 - 15	1.5 - 2.25	1 - 1.20	32	30/32	
	15 - 35	2.25 - 5.25	1.20 - 1.80	32		
35 - 60	5.25 - 9	1.80 - 2.34	40	38/40		
SIPHON ACTION URINAL With small independent waste Base Flow Rate 0.3 L/sec. (x 3 seconds)	1	0.30	0.30	16	14/16	0.60
	2	0.60	0.60	20	20/22	
	3 or 4	0.90 - 1.20	0.90 - 1.20	25	26/28	
	5 - 10	1.5 - 3	1.50 - 2	32		
	11 - 16	3.30 - 4.80	2.10 - 2.50	40	38/40	
17 - 30	5.10 - 12	2.60 - 4.50	50			
SIPHON ACTION URINAL Integrated ceramic waste Base Flow Rate 0.5 L/sec. (x 7 seconds)	1	0.50	0.50	20	18/20	0.60
	2	1	1	25	26/28	
	3 or 4	1.50 - 2	1.50 - 2	32		
	5	2.50	2.50	40	38/40	
	6 - 15	3 - 7.50	2.70 - 4			
16 - 40	8 - 20	4.10 - 6.41				
WC 3/4" - 1" Standardised Base Flow Rate 1 L./sec. (x 7 seconds)	1	1	1	20	20/22	1.5
	2 or 3	2 or 3	1	25	26/28	
	4 - 12	4 - 12	2	32		
	13 - 24	13 - 24	3	40	38/40	
	25 - 50	25 - 50	4	50		
	+ 50	+ 50	5	50		
WC 1¼" Base Flow Rate 1.2 L/sec. (x 7 seconds)	1	1.20	1.20	25	26/28	1
	2 or 3	2.40 - 3.60	1.20	32		
	4 - 12	4.80 - 14.40	2.40	40	38/40	
	13 - 24	15.60 - 28.80	3.60	50		
	25 - 50	30 - 60	4.80	63		
	+ 50	60	6	63		

1mCE = 0.1 bar

Important: after selecting the pipe diameter, check that the residual dynamic pressure remains sufficient at the time flow valves inlet. Take into account all pressure drops in the installation. See the following CALCULATION GUIDE parts 5 and 6.