

# FRICTIONAL LOSS CHART FOR HDPE PIPES AS PER IS 14151 (PART-1)

## CLASS -3 (PN 4)

Nominal Size	63	75	90	110	125	140	160	180	200	
Average OD in mm	63.30	75.35	90.40	110.50	125.60	140.65	160.75	180.85	200.90	
Average Wall Thickness in mm	2.70	3.20	3.80	4.50	5.15	5.75	6.60	7.35	8.20	
ID in mm	57.90	68.95	82.80	101.50	115.30	129.15	147.55	166.15	184.50	
Flow in GPM	Flow in GPH	HEAD LOSS DUE TO FRICTIONAL RESISTANCE IN FEET / 100 FEET OR METER / 100 METERS								
10	600.00	0.13								
15	900.00	0.27	0.11							
20	1200.00	0.46	0.20							
25	1500.00	0.69	0.30	0.12						
30	1800.00	0.97	0.41	0.17						
40	2400.00	1.65	0.71	0.29	0.11					
50	3000.00	2.50	1.07	0.44	0.16					
60	3600.00	3.50	1.50	0.61	0.23	0.12				
70	4200.00	4.66	1.99	0.82	0.30	0.16				
85	5100.00	6.68	2.86	1.17	0.44	0.23	0.13			
100	6000.00	9.03	3.86	1.58	0.59	0.32	0.18	0.10		
125	7500.00		5.83	2.39	0.89	0.48	0.28	0.14		
150	9000.00		8.18	3.36	1.25	0.67	0.39	0.20	0.11	
200	12000.00			5.72	2.12	1.14	0.66	0.34	0.19	0.12
225	13500.00			7.11	2.64	1.42	0.82	0.43	0.24	0.14
250	15000.00			8.64	3.21	1.73	0.99	0.52	0.29	0.18
275	16500.00			10.31	3.83	2.06	1.19	0.62	0.35	0.21
300	18000.00				4.50	2.42	1.39	0.73	0.41	0.25
325	19500.00				5.22	2.81	1.62	0.84	0.47	0.28
350	21000.00				5.98	3.22	1.85	0.97	0.54	0.33
375	22500.00				6.80	3.66	2.11	1.10	0.62	0.37
400	24000.00				7.66	4.12	2.37	1.24	0.70	0.42
450	27000.00				9.53	5.12	2.95	1.54	0.87	0.52
500	30000.00					6.23	3.59	1.88	1.05	0.63

THE ABOVE CHART IS PREPARED ON THE BASIS OF HAZEN-WILLIAMS FORMULA NOTED BELOW

$$f = 0.2083 \times (100/C)^{1.852} \times Q^{1.852}/d^{4.8655}$$

	<b>where</b>	<b>f -</b>		Frictional Loss in Feet or meter of water per 100 feet or meter of Pipe
		<b>d -</b>		Inside Diameter of Pipe in Inches
		<b>Q -</b>		Flow in gallons per minute
		<b>C -</b>		Constant for inside roughness of the Pipe ( in case of PVC ,it is 150 )