

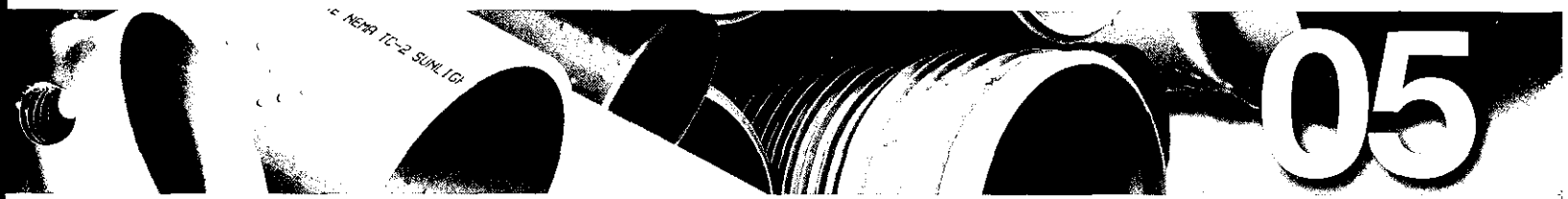
FLOW/FRICTION CHARTS

FLOW/FRICTION LOSS, BLUE BRUTE™ PVC PIPE

4" C.I.O.D. (AWWA C900) ACTUAL O.D. 4.80 INCH

FLOW (GAL/MIN)	DR 25 (165 psi)		DR 18 (235 psi)		DR 14 (305 psi)	
	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT
20	0.424	0.008	0.456	0.010	0.493	0.012
25	0.530	0.012	0.570	0.015	0.616	0.018
30	0.636	0.017	0.684	0.021	0.739	0.025
35	0.742	0.023	0.798	0.028	0.863	0.033
40	0.847	0.029	0.912	0.035	0.986	0.043
45	0.953	0.037	1.026	0.044	1.109	0.053
50	1.059	0.045	1.140	0.053	1.232	0.064
60	1.271	0.062	1.368	0.075	1.479	0.090
70	1.483	0.083	1.597	0.099	1.725	0.120
75	1.589	0.094	1.711	0.113	1.849	0.136
80	1.695	0.106	1.825	0.127	1.972	0.154
90	1.907	0.132	2.053	0.158	2.218	0.191
100	2.119	0.161	2.281	0.192	2.465	0.232
125	2.648	0.243	2.851	0.291	3.081	0.351
150	3.178	0.341	3.421	0.408	3.697	0.492
175	3.708	0.453	3.991	0.542	4.313	0.655
200	4.237	0.580	4.562	0.694	4.930	0.839
250	5.297	0.877	5.702	1.050	6.162	1.268
300	6.356	1.230	6.842	1.471	7.394	1.777
350	7.415	1.636	7.983	1.957	8.627	2.364
400	8.475	2.095	9.123	2.506	9.859	3.027
450	9.534	2.606	10.264	3.117	11.092	3.765
500	10.593	3.167	11.404	3.789	12.324	4.576
600	12.712	4.439	13.685	5.311	14.789	6.415
700	14.831	5.906	15.965	7.066	17.254	8.534

Based on calculation methods and design tables set forth by the Uni-Bell® PVC Pipe Association, "Handbook of PVC Pipe Design and Construction."



05

FLOW/FRICTION CHARTS

FLOW/FRICTION LOSS, BLUE BRUTE™ PVC PIPE

4" C.I.O.D. (AWWA C900) ACTUAL O.D. 4.80 INCH

FLOW (GAL/MIN)	DR 25 (165 psi)		DR 18 (235 psi)		DR 14 (305 psi)	
	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT
20	0.424	0.008	0.456	0.010	0.493	0.012
25	0.530	0.012	0.570	0.015	0.616	0.018
30	0.636	0.017	0.684	0.021	0.739	0.025
35	0.742	0.023	0.798	0.028	0.863	0.033
40	0.847	0.029	0.912	0.035	0.986	0.043
45	0.953	0.037	1.026	0.044	1.109	0.053
50	1.059	0.045	1.140	0.053	1.232	0.064
60	1.271	0.062	1.368	0.075	1.479	0.090
70	1.483	0.083	1.597	0.099	1.725	0.120
75	1.589	0.094	1.711	0.113	1.849	0.136
80	1.695	0.106	1.825	0.127	1.972	0.154
90	1.907	0.132	2.053	0.158	2.218	0.191
100	2.119	0.161	2.281	0.192	2.465	0.232
125	2.648	0.243	2.851	0.291	3.081	0.351
150	3.178	0.341	3.421	0.408	3.697	0.492
175	3.708	0.453	3.991	0.542	4.313	0.655
200	4.237	0.580	4.562	0.694	4.930	0.839
250	5.297	0.877	5.702	1.050	6.162	1.268
300	6.356	1.230	6.842	1.471	7.394	1.777
350	7.415	1.636	7.983	1.957	8.627	2.364
400	8.475	2.095	9.123	2.506	9.859	3.027
450	9.534	2.606	10.264	3.117	11.092	3.765
500	10.593	3.167	11.404	3.789	12.324	4.576
600	12.712	4.439	13.685	5.311	14.789	6.415
700	14.831	5.906	15.965	7.066	17.254	8.534

Based on calculation methods and design tables set forth by the Uni-Bell® PVC Pipe Association, "Handbook of PVC Pipe Design and Construction."

FLOW/FRICTION CHARTS

(CONTINUED)

FLOW/FRICTION LOSS, BLUE BRUTE™ PVC PIPE

6" C.I.O.D. (AWWA C900) ACTUAL O.D. 6.90 INCH

FLOW (GAL/MIN)	DR 25 (165 psi)		DR 18 (235psi)		DR 14 (305 psi)	
	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT
50	0.513	0.008	0.552	0.009	0.596	0.011
60	0.615	0.011	0.662	0.013	0.716	0.015
70	0.718	0.014	0.772	0.017	0.835	0.021
75	0.769	0.016	0.827	0.019	0.895	0.023
80	0.820	0.018	0.882	0.022	0.954	0.026
90	0.923	0.023	0.993	0.027	1.073	0.033
100	1.025	0.027	1.103	0.033	1.193	0.040
125	1.282	0.042	1.379	0.050	1.491	0.060
150	1.538	0.058	1.655	0.070	1.789	0.084
175	1.794	0.078	1.930	0.093	2.087	0.112
200	2.051	0.099	2.206	0.119	2.385	0.143
250	2.563	0.150	2.758	0.179	2.982	0.217
300	3.076	0.210	3.309	0.251	3.578	0.304
350	3.589	0.280	3.861	0.334	4.175	0.404
400	4.101	0.358	4.412	0.428	4.771	0.518
450	4.614	0.446	4.964	0.533	5.367	0.644
500	5.126	0.542	5.516	0.647	5.964	0.783
600	6.152	0.759	6.619	0.907	7.156	1.097
700	7.177	1.010	7.722	1.207	8.349	1.460
800	8.202	1.294	8.825	1.546	9.542	1.869
1000	10.253	1.956	11.031	2.337	11.927	2.826

Based on calculation methods and design tables set forth by the Uni-Bell® PVC Pipe Association, "Handbook of PVC Pipe Design and Construction."

FLOW/FRICTION LOSS, BLUE BRUTE™ PVC PIPE

8" C.I.O.D. (AWWA C900) ACTUAL O.D. 9.05 INCH

FLOW (GAL/MIN)	DR 25 (165 psi)		DR 18 (235 psi)		DR 14 (305 psi)	
	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT
100	0.596	0.007	0.641	0.009	0.693	0.011
125	0.745	0.011	0.802	0.013	0.866	0.016
150	0.894	0.016	0.962	0.019	1.040	0.022
200	1.192	0.027	1.283	0.032	1.386	0.038
250	1.490	0.040	1.604	0.048	1.733	0.058
300	1.788	0.056	1.924	0.067	2.079	0.081
350	2.086	0.075	2.245	0.089	2.426	0.108
400	2.384	0.096	2.566	0.115	2.772	0.138
450	2.682	0.119	2.887	0.142	3.119	0.172
500	2.980	0.145	3.207	0.173	3.466	0.209
600	3.576	0.203	3.849	0.243	4.159	0.293
700	4.172	0.270	4.490	0.323	4.852	0.390
800	4.768	0.346	5.132	0.413	5.545	0.499
1000	5.960	0.523	6.415	0.625	6.931	0.754
1200	7.152	0.732	7.698	0.876	8.317	1.057
1400	8.344	0.975	8.981	1.165	9.704	1.407
1600	9.536	1.248	10.264	1.492	11.090	1.802
2000	11.920	1.887	12.829	2.256	13.862	2.724

Based on calculation methods and design tables set forth by the Uni-Bell® PVC Pipe Association, "Handbook of PVC Pipe Design and Construction."



FLOW/FRICTION CHARTS

(CONTINUED)

FLOW/FRICTION LOSS, BLUE BRUTE™ PVC PIPE

10" C.I.O.D. (AWWA C900) ACTUAL O.D. 11.10 INCH

FLOW (GAL/MIN)	DR 25 (165 psi)		DR 18 (235 psi)		DR 14 (305 psi)	
	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT
175	0.693	0.008	0.746	0.009	0.807	0.011
200	0.792	0.010	0.853	0.012	0.922	0.014
250	0.990	0.015	1.066	0.018	1.152	0.021
300	1.189	0.021	1.279	0.025	1.383	0.030
350	1.387	0.028	1.492	0.033	1.613	0.040
400	1.585	0.035	1.706	0.042	1.843	0.051
450	1.783	0.044	1.919	0.053	2.074	0.064
500	1.981	0.054	2.132	0.064	2.304	0.077
600	2.377	0.075	2.559	0.090	2.765	0.109
700	2.773	0.100	2.985	0.120	3.226	0.144
800	3.169	0.128	3.411	0.153	3.687	0.185
1000	3.962	0.194	4.264	0.231	4.609	0.280
1200	4.754	0.271	5.117	0.324	5.530	0.392
1400	5.547	0.361	5.970	0.432	6.452	0.521
1600	6.339	0.462	6.823	0.553	7.374	0.668
2000	7.924	0.699	8.528	0.835	9.217	1.009
2500	9.905	1.056	10.661	1.263	11.522	1.526
3000	11.886	1.480	12.793	1.770	13.826	2.139

Based on calculation methods and design tables set forth by the Uni-Bell® PVC Pipe Association, "Handbook of PVC Pipe Design and Construction."

FLOW/FRICTION LOSS, BLUE BRUTE™ PVC PIPE

12" C.I.O.D. (AWWA C900) ACTUAL O.D. 13.20 INCH

FLOW (GAL/MIN)	DR 25 (165 psi)		DR 18 (235 psi)		DR 14 (305 psi)	
	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT	VELOCITY FT/S	PRESSURE DROP psi/100 FT
300	0.840	0.009	0.904	0.011	0.978	0.013
350	0.981	0.012	1.055	0.014	1.141	0.017
400	1.121	0.015	1.206	0.018	1.304	0.022
450	1.261	0.019	1.357	0.023	1.467	0.027
500	1.401	0.023	1.507	0.028	1.629	0.033
600	1.681	0.032	1.809	0.039	1.955	0.047
700	1.961	0.043	2.110	0.051	2.281	0.062
800	2.241	0.055	2.412	0.066	2.607	0.080
1000	2.802	0.083	3.015	0.100	3.259	0.120
1200	3.362	0.117	3.617	0.140	3.911	0.169
1400	3.922	0.155	4.220	0.186	4.563	0.224
1600	4.482	0.199	4.823	0.238	5.214	0.287
2000	5.603	0.301	6.029	0.359	6.518	0.434
2500	7.004	0.455	7.536	0.543	8.147	0.657
3000	8.405	0.637	9.044	0.761	9.777	0.920
3500	9.805	0.848	10.551	1.013	11.406	1.225
4000	11.206	1.085	12.058	1.297	13.036	1.568
4500	12.607	1.350	13.565	1.613	14.665	1.950

Based on calculation methods and design tables set forth by the Uni-Bell® PVC Pipe Association, "Handbook of PVC Pipe Design and Construction."