



Project: ASTM D 6460: Large-scale Channel Testing (Single Replicate Results)
Concrete Cloth with Longitudinal Joints

Client: Milliken

Test Date: 16/01/3013

Flow Range: 1.0 - 10.0+ cfs

Flume Size & Slope: 2-ft wide bottom x 2:1 side slopes (Trapezoidal) x 40-ft long; 5% bed slope

Event: Four increasing flows.

Cross-Section	to channel bottom	to water surface	water depth, ft	area, ft ²	velocity, ft/sec	R, ft	Q, cfs	Manning's n		
1	686	647	0.13	0.29	7.35	0.11	2.12	0.011		
	686	627	0.19	0.46	9.09	0.16	4.20	0.011		
	686	604	0.27	0.68	9.87	0.21	6.74	0.012		
	686	586	0.33	0.87	10.00	0.25	8.71	0.013		
2	787	751	0.12	0.26	7.10	0.10	1.88	0.010		
	787	739	0.16	0.36	8.79	0.13	3.20	0.010		
	787	724	0.21	0.50	10.06	0.17	5.02	0.010		
	787	672	0.38	1.04	10.99	0.28	11.42	0.013		
3	645	614	0.10	0.22	7.13	0.09	1.60	0.009		
	645	597	0.16	0.36	8.05	0.13	2.93	0.011		
	645	577	0.22	0.55	10.35	0.18	5.65	0.010		
	645	565	0.26	0.66	11.20	0.21	7.42	0.010		
4	690	645	0.15	0.34	7.01	0.13	2.38	0.012		
	690	633	0.19	0.44	7.59	0.16	3.37	0.013		
	690	606	0.28	0.70	9.32	0.22	6.55	0.013		
	690	587	0.34	0.90	9.92	0.26	8.97	0.014		
5	605	582	0.08	0.16	7.03	0.07	1.14	0.008		
	605	565	0.13	0.30	8.99	0.11	2.67	0.009		
	605	555	0.16	0.38	10.14	0.14	3.87	0.009		
	605	532	0.24	0.59	10.98	0.19	6.52	0.010		
6	689	646	0.14	0.32	7.00	0.12	2.25	0.012		
	689	620	0.23	0.56	7.46	0.18	4.14	0.014		
	689	596	0.31	0.80	9.11	0.24	7.26	0.014		
	689	589	0.33	0.87	10.01	0.25	8.72	0.013		
7	677	640	0.12	0.27	7.22	0.11	1.97	0.010		
	677	629	0.16	0.36	8.63	0.13	3.15	0.010		
	677	597	0.26	0.66	10.05	0.21	6.66	0.012		
	677	568	0.36	0.97	10.40	0.27	10.10	0.013		
8	764	730	0.11	0.25	6.55	0.10	1.62	0.011		
	764	721	0.14	0.32	8.80	0.12	2.83	0.009		
	764	684	0.26	0.66	9.73	0.21	6.45	0.012		
	764	684	0.26	0.66	9.59	0.21	6.36	0.012		
			Avg Depth 1:	0.12				Avg Manning's n 1:	0.010	Overall Average Manning's n 0.011
			Avg Depth 2:	0.17				Avg Manning's n 2:	0.011	
			Avg Depth 3:	0.25				Avg Manning's n 3:	0.012	
			Avg Depth 4:	0.31				Avg Manning's n 4:	0.012	

Test Setup: The intent of this testing was to measure the Manning's *n* using ASTM D6460 and a trapezoidal channel. The trapezoidal channel with low slope provides an accurate hydraulic radius and the least turbulent flow. It should be noted that the higher flow levels still were somewhat turbulent leading to varying flow depths and velocities from cross-section to cross-section. The channel was "calibrated" by lining it with polyethylene sheeting to create a very, very low friction condition to compare to. The Manning's *n* for this calibrated condition was 0.010.

The testing reported herein is based upon accepted industry practice as well as the test method listed. Test results do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose

CJS 1/18/13
Quality Review / Date



Trapezoidal Channel Prepared



Anchor Trenches along the Top Edge of the Channel



Longitudinal Panels of Concrete Cloth Deployed



Seaming of Concrete Cloth Panels (screws added after)



Completed Installation



Spraying Water to Hydrate Concrete Cloth



Velocity Meter Inserted into Flow



Higher Flows Are More Turbulent