

STORM SEWER DESIGN by the Modified Rational Method

Pipe Sizes STANDARD Manhole Sizes STANDARD

Return Period (years)	1	Foul Sewage (l/s/ha)	0.000	Maximum Backdrop Height (m)	1.500
M5-60 (mm)	18.000	Volumetric Runoff Coeff.	0.750	Min Design Depth for Optimisation (m)	1.200
Ratio R	0.360	PIMP (%)	100	Min Vel for Auto Design only (m/s)	1.00
Maximum Rainfall (mm/hr)	50	Add Flow / Climate Change (%)	0	Min Slope for Optimisation (1:X)	500
Maximum Time of Concentration (mins)	30	Minimum Backdrop Height (m)	0.200		

Network Design Table for Storm

Network Results Table

Westlakes Engineering Ltd		Page 3
Unit 2.1 , 20 Dale Street Manchester M1 1EZ		
Date 06/12/2023 16:59	Designed by Eleni.Zachara	
File Dale Street 5 litres results - December 2...	Checked by	
Innovyze	Network 2020.1.3	

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S01	47.500	0.950	Open Manhole	2100	1.000	46.550	450				
C01	47.500	0.968	Open Manhole	1200	1.001	46.532	150	1.000	46.532	450	
C02	47.500	1.019	Open Manhole	1200	1.002	46.481	150	1.001	46.481	150	
	47.350	0.928	Open Manhole	1200		OUTFALL		1.002	46.422	150	

No coordinates have been specified, layout information cannot be produced.

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Online Controls for Storm																																																																											
Hydro-Brake® Optimum Manhole: C01, DS/PN: 1.001, Volume (m³): 3.4																																																																											
Unit Reference MD-CCL-0092-5000-0800-5000 Design Head (m) 0.800 Design Flow (l/s) 5.0 Flush-Flo™ Objective Minimise blockage risk Application Surface Sump Available No Diameter (mm) 92 Invert Level (m) 46.532 Calculated Minimum Outlet Pipe Diameter (mm) 150 Suggested Manhole Diameter (mm) 1200																																																																											
<table><tr><td>Control Points</td><td>Head (m)</td><td>Flow (l/s)</td><td>Control Points</td><td>Head (m)</td><td>Flow (l/s)</td></tr><tr><td>Design Point (Calculated)</td><td>0.800</td><td>5.0</td><td>Kick-Flo®</td><td>0.277</td><td>3.0</td></tr><tr><td>Flush-Flo™</td><td>0.201</td><td>5.0</td><td>Mean Flow over Head Range</td><td>-</td><td>3.7</td></tr></table>				Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)	Design Point (Calculated)	0.800	5.0	Kick-Flo®	0.277	3.0	Flush-Flo™	0.201	5.0	Mean Flow over Head Range	-	3.7																																																						
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The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated																																																																											
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