Online Controls for Storm

Hydro-Brake® Optimum Manhole: S14, DS/PN: 1.006, Volume (m³): 1.4

Unit Reference	MD-SHE-0104-5000-1071-5000
Design Head (m)	1.071
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	104
Invert Level (m)	85.349
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.071	5.0
Flush-Flo™	0.319	5.0
Kick-Flo®	0.678	4.0
Mean Flow over Head Range	-	4.3

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.5	1.200	5.3	3.000	8.1	7.000	12.1
0.200	4.8	1.400	5.7	3.500	8.7	7.500	12.5
0.300	5.0	1.600	6.0	4.000	9.3	8.000	12.9
0.400	4.9	1.800	6.4	4.500	9.8	8.500	13.3
0.500	4.8	2.000	6.7	5.000	10.3	9.000	13.6
0.600	4.5	2.200	7.0	5.500	10.8	9.500	14.0
0.800	4.4	2.400	7.3	6.000	11.2		
1.000	4.8	2.600	7.6	6.500	11.7		

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model		FSR	Ratio R 0.400
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	17.000	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	30

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	S2	30 Winter	100	+30%	100/15 Summer			
1.001	S3	15 Winter	100	+30%	100/15 Summer			
1.002	S5	15 Summer	100	+30%	100/15 Summer			
2.000	S7	15 Winter	100	+30%	100/15 Summer			
1.003	S8	15 Winter	100	+30%	100/15 Summer			
1.004	S10	15 Winter	100	+30%	100/15 Summer			
1.005	S12	60 Winter	100	+30%	100/15 Summer	100/15 Summer		
1.006	S14	30 Winter	100	+30%	100/15 Summer	100/15 Summer		

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S2	87.277	0.734	0.000	0.79		5.0	FLOOD RISK	
1.001	S3	87.277	0.872	0.000	1.09		6.4	FLOOD RISK	
1.002	S5	87.334	0.991	0.000	1.03		6.8	FLOOD RISK	
2.000	S7	87.111	0.388	0.000	0.19		3.8	SURCHARGED	
1.003	S8	87.085	1.055	0.000	1.46		9.6	SURCHARGED	
1.004	S10	86.490	0.735	0.000	0.75		13.1	SURCHARGED	
1.005	S12	86.429	0.793	8.832	0.40		7.1	FLOOD	8
1.006	S14	86.420	0.921	0.086	0.06		5.0	FLOOD	1

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