

GCiC Modelling Parameter Specification

Hydraulic Modelling Minimum Details

Where hydraulic modelling software is used, we expect the following parameters to be used and information to be presented.

Parameter	Expected Value/ Minimum										
Design Rainfall	FSR or FEH can be used (present relevant extract for review)										
SAAR (mm)	In the region of 670										
M5-60	In the region of 18										
Ration 'R'	In the region of 0.4										
Hydrological Area	4										
Maximum Rainfall (mm/hr)	>999 (some software defaults to 50mm/hr this would not be accepted)										
PIMP	100% (to be shown on outputs)										
Volumetric Run-off Coefficient values	Summer	1	Winter	1	Summer & winter profiles used						
Pipe Roughness (Surface Water default)	0.6mm										
Additional Flow	0					Foul flow			0		
Time of Entry	5min maximum for small developments (<5ha) we would not accept an area/time inflow. Any deviation would need supporting evidence to show time of travel and concentration calculations. Exceptions by approval with GCiC										
Areal reduction factor	1 (unless site drained is significant site of over 10ha)										
Drain-down time (lag time)	Should be long enough to allow any storage to return to DWF conditions										
Manhole headloss default values	Default accepted										
MADD factor	1	Additional Storage (m ³ /ha)				0	Lateral & chamber storage ignored				
Return Period(s)	1	2	30	100							
Climate Change	0	0	0	40%							
Durations (mins)	15	30	60	120	180	240	360	480	600	720	1440
Margin for flood risk	300mm										
Creep	10% on all impermeable areas to allow for urban creep										
Evaporation (mm/day)	1 mm/day for winter and 3mm/day for winter										
Plan of contributing areas	This needs to match model input and clearly show where creep has been applied										
Permeable area contributing	Can be assigned as 100% PIMP for 20% of the total permeable area contributing. <i>A contour plan or routing assessment needs to be provided for approval</i>										
Control Structure Summary	Identifying the number of controls										
Infiltration Rates	We would not accept infiltration rates applied to the base of infiltration structures. We assume they would silt-up and their efficiency significantly reduce over the lifetime of the structure. <i>Infiltration rates must match those determined from testing (such as BRE 365)</i>										
Factor of Safety (FoS)	For infiltration features a FoS must be included. A minimum value of 2 is acceptable but CIRIA guidance should be considered										
Associated detail relating to control(s)	For example, a vortex control should include H/Q and orifice size Cellular/ infiltration structures to include area/ depth relationship and porosity/ percolation rates/ Factor of Safety <i>Dimensions should match any details on plans or drawings.</i>										
Network schedule (Nodes)	Identifying nodes, areas, ToE, chamber sizes, depths and cover levels <i>Dimensions should match any details on plans or drawings.</i>										
Network schedule (Pipes)	Identifying up & downstream nodes, length, pipe roughness, invert levels, shape, pipe dimensions. <i>Dimensions should match any details on plans or drawings.</i>										
Output	Critical results for a range of durations indicating status, inflows, outflows and volumes										
Output Graphs	Showing the inflow, outflow, rainfall, depth and volume any SUDS feature for the critical duration										