Flow Chart

The standard rainwater system covers a comprehensive range of profiles in different styles and sizes.

The chart below indicates the profiles, sizes and capacities in order that the correct product may be selected for each refurbishment and new development.

Should any assistance be required to select a system applicable to your design, please contact our Technical Services Department with regard to the most cost effective system. If what you require is not shown then please contact us. We will always endeavour to meet your needs.

Gutter Profile	Size (mm)	Gutter Capacity	Outlet Size						
			Round Pipes				Square & Rectangular Pipes		
			63mmø	76mmø	102mmø	150mmø	76x76	76x102	102x102
	112x55	0.59	1.12	1.33	1.77	-	1.66	1.94	2.22
	125x59	0.76	1.15	1.37	1.82	-	1.71	2.00	2.28
	125x100	3.41	2.58	3.68	5.96	-	4.50	5.70	6.76
	120x72	1.26	1.19	1.92	2.52	-	-	-	-
	100x75	1.45	1.16	1.90		-	1.80	2.41	-
	125x100	2.84	1.28	2.19	3.51	-	2.66	3.10	-
	150x100	3.68	-	2.22	3.56	-	270	3.14	4.87
	200x150	8.32	2.41	3.1	6.07	13.66	4.27	5.69	7.59
	100x75	2.27	1.62	2.29	4.08		2.87	3.35	4.82
	125x100	4.37	1.87	2.65	4.71	-	3.31	4.42	5.89
	150x100	5.25	1.87	2.65	4.71	7.07	3.31	4.42	5.89
	150x150	9.64	2.29	3.24	577	12.99	4.60	5.41	7.21
	200x150	12.86	2.29	3.24	5.77	12.99	4.06	5.41	7.21

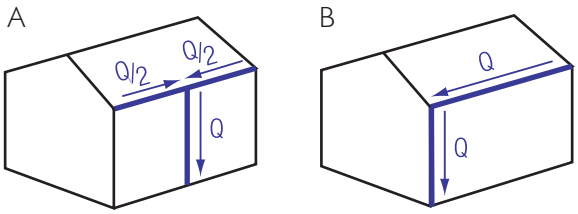
Flow Calculations

1. Design capacities calculated in accordance with BS 6367.

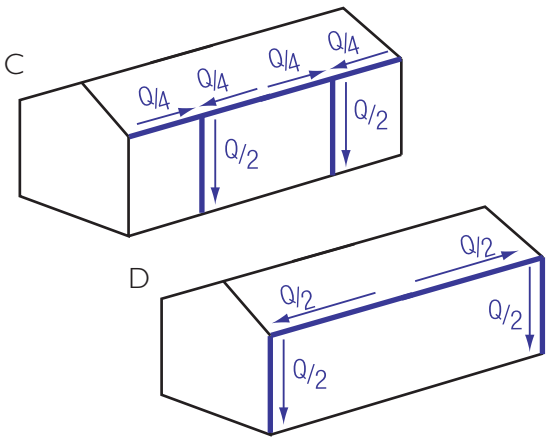
2. Distance between stop end and outlet should not exceed 50 x depth of gutter, and distance between outlets should not exceed 100 x depth of gutter.

3. Attention is drawn to para 8.3.2 and Fig.3 of the above BS Code of Practise: i.e. careful placing of outlets enables smallest practicable gutter sizes to be used.

   For the same total flow (Q), the gutter in Fig.A requires half the capacity of the gutter in Fig.B. Outlet capacities remain the same.



   Similarly:
   For the same total flow (Q), the gutter in Fig.C requires half the capacity of the gutter in Fig.D. Outlet capacities remain the same.



4. Where the length (Lg) of an eaves gutter is more than 50 times its overall depth (d) the following reduction factors should be applied.

Lg/d	Reduction Factor
50	1.0
100	0.93
150	0.86
200	0.80

   Lg = either the distance between stop end and outlet, or half of the distance between two outlets.

5. Where a corner is near to an outlet, a further reduction factor should be applied.

   Less than 2m from outlet:
   reduction factor = 0.8
   Between 2m and 4m from outlet:
   reduction factor = 0.9

6. Apparent anomalies can occur in the capacities chart as discharge characteristics change from 'weir' to 'orifice' type.

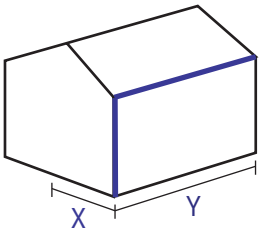
Fixing Advice:

Designs are based on rainfall rate of 75mm/hr.
Therefore: RUN-OFF RATE (l/s)
=EFFECTIVE AREA m^2 x 0.0208

Effective roof areas can be calculated as follows (from Building Regulations):

Type of Surface	Design area (m^2)
Flat Roof	Plan Area of Relevant Proportion
30° Pitch Roof	Plan Area of Relevant Proportion x 1.29
45° Pitch Roof	Plan Area of Relevant Proportion x 1.50
60° Pitch Roof	Plan Area of Relevant Proportion x 1.87

Simple Example
X = 5m, Y = 10m
Angle of roof 30°



System required:
Moulded Ogee with round pipe.
Design Area ('Effective Area') = 5x10 x1.29 = 64.5m^2
Run Off = 64.5m^2 x 0.0208 l/s per m^2 = 1.34 l/s

From chart (page 34), 125 x 100 gutter with 76 Ø downpipe appears suitable, but check:

$\frac{Lg}{d} = \frac{10}{0.075} = 133$ therefore reduction factor = 0.86

Gutter capacity x reduction factor = 2.84 x 0.86 = 2.44l/s, therefore the proposed system is suitable.