

## Flow Rates

### Harmer Roof Outlets

Ref: FR001DR

#### Notes:

- Flow rates are in litres per second.
- Head of water is 35mm.
- Performances are given within 1/3 rainwater pipe capacity limits as required by BS EN 12056.
- For regional rainfall characteristics and variable outlet performances specific to depth of water and rainfall intensity contact Alumasc Technical Services.
- All flow tests have been determined by laboratory testing carried out at Salford University's Department of Civil Engineering.

#### When designing a rainwater scheme:

- Incorporate a back-up outlet to prevent failure through blockage even though a single outlet may be sufficient for the flow.
- Do not design to absolute outlet capacities, but create a factor of safety of 10% to allow for greater than designed-for storm intensities.
- Before site completion or handover ensure that all outlets have been correctly installed.
- Check that clamps are tight, and grates are fitted and secure.
- Always ensure that outlets are inspected for blockages and cleaned out not less than twice yearly.

#### For further information contact Alumasc Technical Services

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#### Harmer Roof - AV Outlets

Pipe Dia	Outlet Type	Connection	Product Code	Domed Grate (l/s)	Flat Grate (l/s)
50mm	Vertical	Spigot	AV200	1.69	1.69
	Vertical	Screw	AV200T	1.69	1.69
75mm	Vertical	Spigot	AV300	4.97	4.97
	Vertical	Screw	AV300T	4.97	4.97
	Multi-Gulley	-	MAV75	4.97	4.97
	Retro-Gulley	-	RAV75	4.63	4.63
100mm	Vertical	Spigot	AV400	10.71	10.71
	Vertical	Screw	AV400T	10.71	10.71
	Multi-Gulley	-	MAV100	9.00	-
	Retro-Gulley	-	RAV100	4.63	4.63
150mm	Vertical	Spigot	AV600	14.07	15.61
	Vertical	Screw	AV600T	13.51	15.55

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#### Harmer Roof - Detail Outlets

Pipe Dia	Outlet Type	Connection	Product Code	Domed Grate (l/s)	Flat Grate (l/s)
50mm	45 deg	Spigot	245	1.69	1.69
	45 deg	Screw	245T	1.69	1.69
	90 deg	Spigot	290	1.69	1.69
	90 deg	Screw	290T	1.69	1.69
	Two Way	Vertical	2TW	-	1.69
	Two Way	Horizontal	2TW	-	1.69
	Two Way Mini	Vertical	2TW/M	-	1.13
	Two Way Mini	Horizontal	2TW/M	-	1.69
	Balcony	Spigot	2BO	-	1.69
	75mm	45 deg	Spigot	345	4.97
45 deg		Screw	345T	4.97	4.97
90 deg		Spigot	390	3.31	3.62
90 deg		Screw	390T	3.39	3.65
Two Way		Vertical	3TW	-	3.94
Two Way		Horizontal	3TW	-	1.47
Balcony		Spigot	3BO	-	4.97
Gulley		-	3GO	4.97	-
100mm	45 deg	Spigot	445	10.66	10.71
	45 deg	Screw	445T	10.71	10.69
	90 deg	Spigot	490	7.19	6.82
	90 deg	Screw	490T	7.29	6.93
	Two Way	Vertical	4TW	-	6.00
	Two Way	Horizontal	4TW	-	2.05
	Balcony	Spigot	4BO	-	8.41
	Gulley	-	4GO	10.41	-
150mm	90 deg	Screw	690T	10.01	11.81
	Two Way	Vertical	6TW	-	6.37
	Two Way	Horizontal	6TW	-	2.91

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#### Harmer Roof - Insulated Outlets

Pipe Dia	Outlet Type	Connection	Product Code	Domed Grate (l/s)	Flat Grate (l/s)
75mm	Vertical	Spigot	1000	4.97	-
	Heated Vertical	Spigot	1004	4.97	-
	Horizontal	Spigot	1008	3.49	-
	Heated Horizontal	Spigot	1011	3.49	-
	Graduated Vertical	Spigot	1017	4.97	-
100mm	Vertical	Spigot	1001	6.53	-
	Heated Vertical	Spigot	1005	6.53	-
	Horizontal	Spigot	1009	6.10	-
	Heated Horizontal	Spigot	1012	6.10	-
	Graduated Vertical	Spigot	1017	6.88	-
150mm	Vertical	Spigot	1003	6.49	-
	Heated Vertical	Spigot	1007	6.49	-