Roof Drain Guide

ORIGIN

The modern roof drain must be designed to drain off rain water in the most effective manner possible while maintaining an aesthetic appeal since it is placed in full view of the public in many instances.

HOW TO SELECT A ROOF DRAIN

To select the proper roof drain, the following information must be determined by the specifier:

- Type of roof construction
- Roof pitch
- Volume of expected rainfall
- Desired rate of drainage
- Roof load and safety overflow requirements
- Locations of drains
- Size
- Vandal proofing

SELECTION OF ROOF DRAIN BODY

For a heavy rainfall region use 12" diameter type for large or small roof areas. For a light rainfall region, use 8-1/2" diameter type for small roof areas.

SELECTING PROPER ROOF DRAIN LEADER SIZES

1. Calculate the total roof area.
2. Determine the maximum hourly rainfall in inches. (The figure can be acquired from your local weather bureau and or local code authority.)
3. Select leader size.
4. From Table 1, determine the number of square feet that can be drained by one roof leader at the local maximum rainfall rate.
5. Divide the total roof area by the area that one leader will handle. The above result is the number of roof drains required for the building. If the result is a fraction less, use the next higher number.

NOTE: It can be readily seen that if 4" leaders were desired the number of roof drains required would increase to 22 drains. If a small number of roof drains are required then a larger leader would have to be chosen. Several small drains and leaders rather than one or two large drains will ensure even, safe and adequate roof drainage. Drains should be spaced for even drainage.

CALCULATING TOTAL G.P.M.

G.P.M. = .0104 x R x A
G.P.M. = Gallons per minute
R = Rainfall Intensity (inches/hour)
A = Roof Area (square feet)
0.0104 = conversion factor

Example: 4" rainfall with a roof area of 30,000 square feet
.0104 x 4" x 30,000 = 1248 G.P.M

TABLE 2 - ALLOWABLE FLOW IN G.P.M

PIPE SIZE	VERTICAL LEADER	HORIZONTAL STORM DRAIN SLOPE / FT		
		1/8"	1/4"	1/2"
2	30	12	17	24
3	90	36	51	72
4	192	78	111	157
5	348	142	201	284
6	566	231	327	462
8	1220	498	705	996
10	2200	902	1275	1804
12	-	1467	2076	2934
15	-	2666	3774	5332

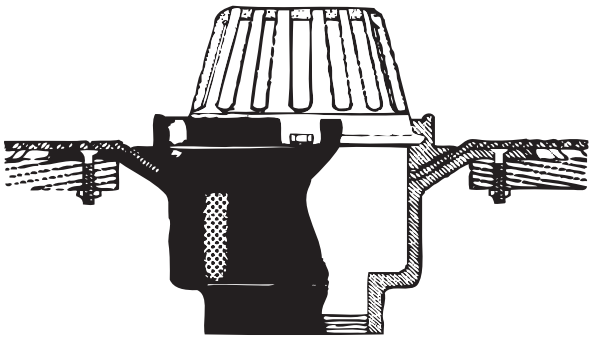
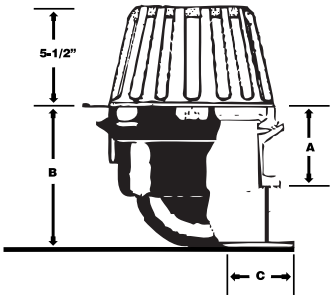


TABLE 1 - HOURLY RAINFALL IN INCHES

LEADERS PIPE SIZE INCHES	SIZE OPEN AREA SQ. IN.	1	1-1/2	2	2-1/2	3	4	5	6	7	8
		ROOF AREA - SQUARE FEET									
2	3.14	2,880	1,920	1,440	1,150	960	720	575	480	410	360
3	7.06	8,880	5,860	4,400	3,520	2,930	2,200	1,760	1,470	1,260	1,100
4	12.56	18,400	12,700	9,200	7,360	6,130	4,600	3,680	3,070	2,630	2,300
5	19.60	34,600	23,050	17,300	13,840	11,530	8,650	6,920	5,765	4,945	4,325
6	28.30	54,000	36,000	27,000	21,600	18,000	13,500	10,800	9,000	7,715	6,750
8	50.25	116,000	77,400	58,000	46,400	38,680	29,000	23,200	19.315	16,570	14,500

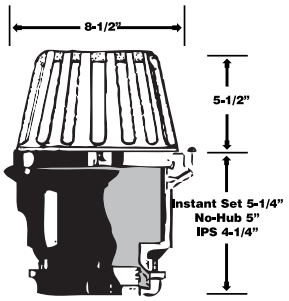
NOTE: Above table is for leader sizes. Select drains with adequate open free area in proportion to the leader size and consistent with code requirements. Based on National Plumbing Code.

Technical Drawings



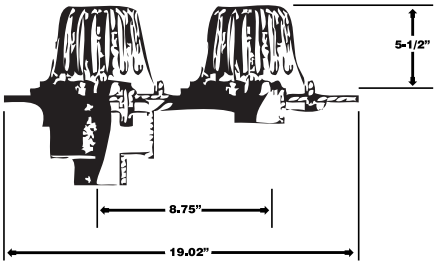
8-1/2" SIDE OUTLET ROOF DRAIN
Available in bottom and side outlet

SIZE	NO-HUB
SIDE OUTLET	
2"	852SN
3"	853SN
4"	854SN

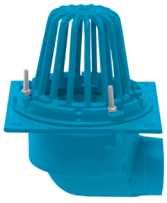


8-1/2" BOTTOM OUTLET ROOF DRAIN
Available in bottom and side outlet

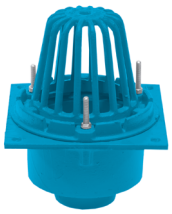
SIZE	NO-HUB
BOTTOM OUTLET	
2"	852N
3"	853N
4"	854N



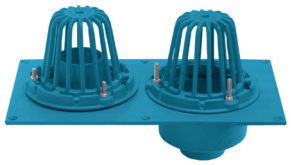
SIZE	NO-HUB
ROOF DRAIN	
2"	850-2N
3"	850-3N
4"	850-4N



853SN



853N



850-3N

850-041

850-003

Roof Drains

PART NUMBER	DESCRIPTION
ROOF DRAIN 8-1/2 SERIES / SIDE OUTLET	
852SN	2" No-Hub
853SN	3" No-Hub
854SN	4" No-Hub
ROOF DRAIN 8-1/2 SERIES / BOTTOM OUTLET	
852N	2" No-Hub
853N	3" No-Hub
854N	4" No-Hub
ROOF DRAIN OVERFLOW COMBINATION	
850-2N	2" x 2" No-Hub
850-3N	3" x 3" No-Hub
850-4N	4" x 4" No-Hub

ROOF DRAIN PARTS	
850-003	Strainer Dome
850-006	Roof Drain Membrane Clamp - Reg
850-007	Roof Drain Membrane Clamp
850-041	2" High Dam Membrane Clamp - 8"