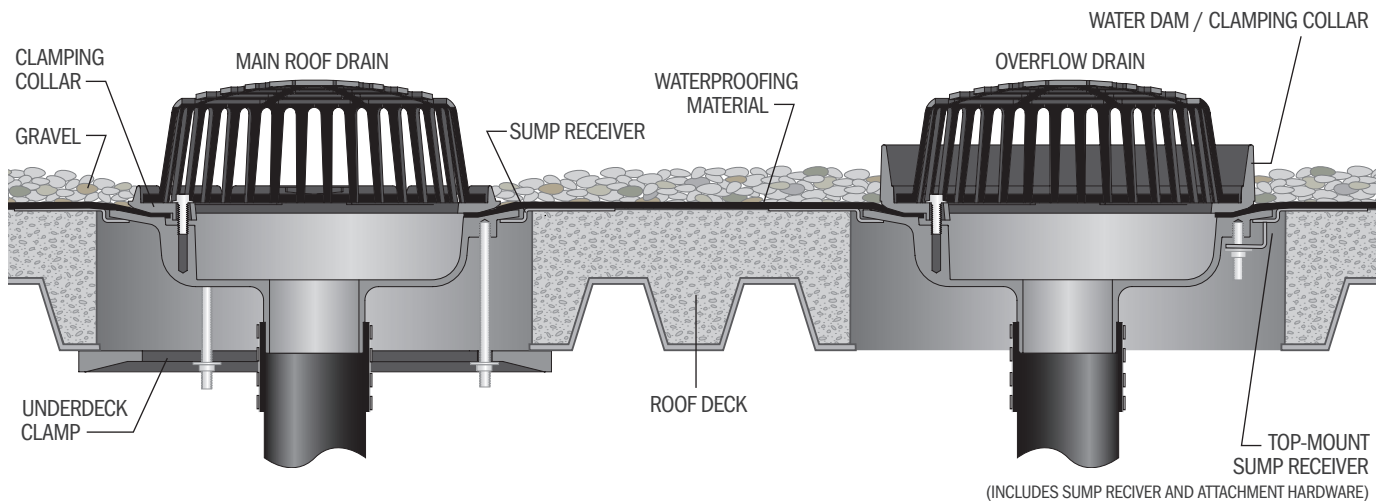


Installation Guide

868 Series Roof Drains

Applications	Item Series
Main Roof Drains	868-52 Series
Combination Roof Drain & Overflow	868-D52 Series
Roof Drain - Medium/Small Areas	868-12 Series, 868-8 Series
Roof Drain - Large Capacity	868-20 Series
Roof Drain with Intake Weir	868-F Series, 868-M Series
Promenade Drains	868-Q Series, 868-R Series
Scupper Drains	868-S Series
Downspout Nozzles	868-N Series
Vandal-Resistant Vent Cover	868-V234

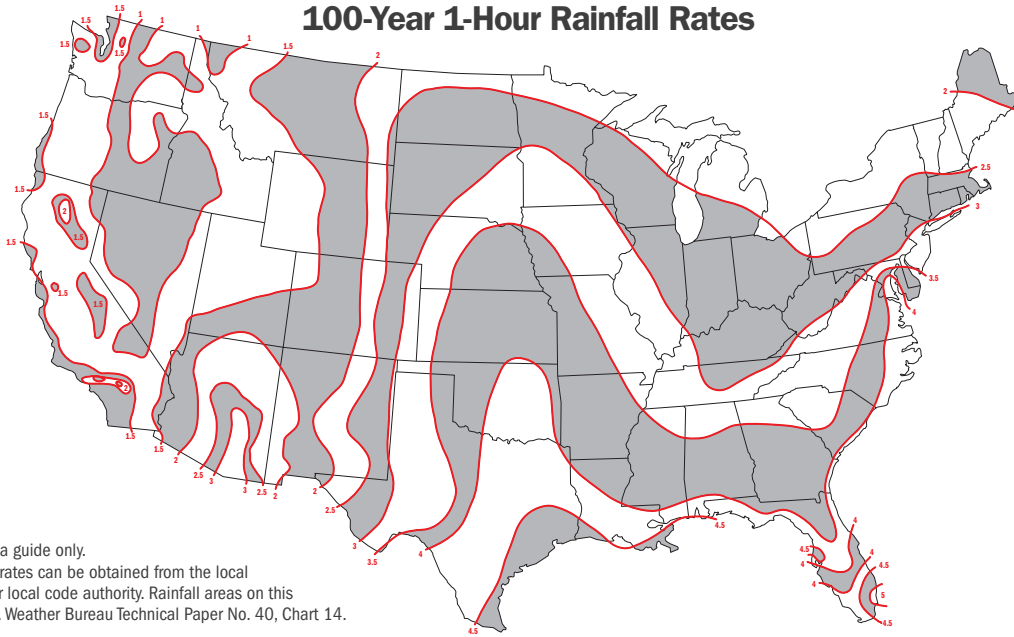
Typical Installation



Always consult the local code for sizing and design criteria when designing the roof drain system. Local code requirements take precedence over information on this sheet or any provided literature.

Refer to local code requirements for emergency/secondary overflow roof drainage. Local codes vary but it is recommended to provide a drain to overflow ratio of 1 to 1. Roof drains shall be installed only in areas where waterproofing material is utilized. A sump receiver with underdeck clamp or top-mount sump receiver is recommended for most installations. Set sump receiver flush with the roof deck and attach to deck with self-tapping screws (supplied by others). Set roof drain into sump receiver opening so that the drain rests evenly within the groove of the sump receiver. Waterproofing material is to be placed over sump receiver and drain flange. Bolt clamping collar to drain body, making sure collar makes full-circle contact with the waterproofing material. Tighten sufficiently to create watertight seal between the drain body, waterproofing and clamping collar. Place dome strainer in clamping collar and twist to lock dome into retaining clips on clamping collar. If using the underdeck clamp, from the underside of the fixture, thread the three studs into the three taps on underside of the drain body and tighten. Install the underdeck clamp onto the studs and affix in place with washer and nut on each stud. Connect drain body outlet to piping system using a No-Hub coupling. Roof drains are designed in accordance with ASME A112.6.4

100-Year 1-Hour Rainfall Rates



This map is offered as a guide only. Actual/current rainfall rates can be obtained from the local weather bureau and/or local code authority. Rainfall areas on this map are based on U.S. Weather Bureau Technical Paper No. 40, Chart 14.

Suggested Steps for Selecting Roof Drain Vertical Leader Size and Number

- 1 Calculate the total roof area - multiply length x width.
- 2 Determine the maximum hourly rainfall in inches for the roof being designed. The map above can be used as a guide. Actual/current rainfall rates can be obtained from the local weather bureau and/or local code authority.
- 3 Select leader size to be used. Using table below, determine the area that can be drained by one roof leader of the selected size at the determined rainfall rate.
- 4 Divide the total roof area by the area that one leader of the selected size will handle. The result is the number of roof drains required for the building. If the result includes a fraction, use the next higher number.

Or, To Determine Drainage Requirements Using GPM:

- 1 Follow steps 1-3 above.
- 2 Use the following formula for Total GPM = 0.0104 x [Rainfall Rate (in/hr)] x [Total Roof Area (sq-ft.)]
- 3 Using table below, determine the max flow GPM that can be drained by one roof leader of the selected size
- 4 Divide the Total GPM by the max flow GPM that one leader of the selected size will handle. The result is the number of roof drains required for the building. If the result includes a fraction, use the next higher number.

Example: 4" Leaders, 4"/hr. Rainfall

- 1 Total Roof Area: 500ft by 200ft = 100,000 sq-ft.
- 2 Determine rate of rainfall - for this example use 4"/hr.
- 3 After studying building plan and physical arrangement, determine that 4" leaders will be used.
- 4 See table below - One 4" leader at 4"/hr rainfall rate will handle 4,600 sq-ft. of roof area.
- 5 Divide total roof area by area found in Step 4 - 100,000 sq-ft. / 4,600 sq-ft. = 21.7 (round up)

Result: 22 roof drains with 4" leaders would be required

Example: 6" Leaders, 4"/hr. Rainfall - Using GPM

- 1 Total Roof Area: 500ft by 200ft = 100,000 sq-ft.
- 2 Determine rate of rainfall - for this example use 4"/hr.
- 3 After studying building plan and physical arrangement, determine that 6" leaders will be used.
- 4 Calculate Total GPM = 4,160 (0.0104 x 4 x 100,000)
- 5 See table below - One 6" vertical leader will handle 563 GPM at 1.75" head
- 6 Divide Total GPM by max flow GPM of selected leader size 4,160 GPM / 563 GPM = 7.38 (round up)

Result: 8 roof drains with 6" leaders would be required

Vertical Leader Size	Vertical Leader Max Flow GPM (1.75" Head)	Maximum Allowable Horizontal Projected Roof Area (sq-ft.) at Various Rainfall Rates							
		1"/Hr	2"/Hr	3"/Hr	4"/Hr	5"/Hr	6"/Hr	7"/Hr	8"/Hr
3"	92	8,800	4,400	2,930	2,200	1,760	1,470	1,260	1,100
4"	192	18,400	9,200	6,130	4,600	3,680	3,070	2,630	2,300
6"	563	54,000	27,000	17,995	13,500	10,800	9,000	7,715	6,750
8"	1,208	116,000	58,000	38,660	29,000	23,200	19,315	16,570	14,500

Note: Data shown in table above is taken from table 1103.1 of the 2021 Uniform Plumbing Code (UPC) and is offered as a guide only. For actual applications, always consult local codes.