

Drain Pipe Sizing Guidelines

Summary: The following contains sizing for both the IPC and UPC plumbing codes. You will need to determine which is appropriate in your area. These calculations assume the roof measurement is for drain piping for all the downspout/gutter system.

In properly sizing the gutter system (i.e. sometimes also referred to as the drainage system), any of the following can be varied: roof size, number of downspouts, slope of the gutters and the size of the gutters and downspouts. Your roof size has been fixed and the below assume it has been constructed to meet building codes.

Roof Size: **4,000**

Rainfall amount: **3.25 inches**

Gallons Per Minute: **.054**

Gallons Per Minute Per Square Foot of Roof Area: **136.0**

Gallons Per Hour Per Square Foot of Roof Area: **8,160**

UPC Drain Piping Size: **5" at 1/8" slope or greater**

IPC Drain Piping Size: **5" at 1/8" slope or greater**

It is important to note that the IPC and the UPC tables calculate drainage piping in very similar methods, but the tables look different. In the UPC and the IPC tables, locate the total roof catchment square footage in the column that contains the rainfall amount for your locale, then you go to first column to determine the required piping size for the given slope each of the tables.

The amount of rainfall that will need to be carried off the roof for St Louis, MO is 3.25 inches of rain per hour or .054 Gallons Per Minute Per Square Foot of Roof Area according to the 100-Year, 1 hour rainfall map from the National Weather Service (refer to Attachment A).

It is important to note that the rainfall rate number used in the IPC and the UPC manuals can differ and neither may be the correct number. Please check with your local building department if you are unsure. Additionally, they will be able to tell you whether the IPC or UPC is the appropriate code for your locale. If the number is different than used in these calculations, please forward to me and I will update.

Detailed Calculations: (missing in this sample report)

100 Year Rainfall Map: (missing in this sample report)

Attachment A

National Weather Service, NOAA

SAMPLE