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Plug
Peddler
Quick Tip!

Back Pressure - Questions and Answers

What is Back Pressure? Back Pressure is the amount of air or water that is built up behind (or in front of) a pipe plug. If the plug is holding back air pressure then the air pressure must be monitored by a properly functioning pressure gauge. Never exceed the back pressure rating that the plug is rated to hold. If the plug is holding back water pressure you will need to calculate the feet of head the plug is holding back.

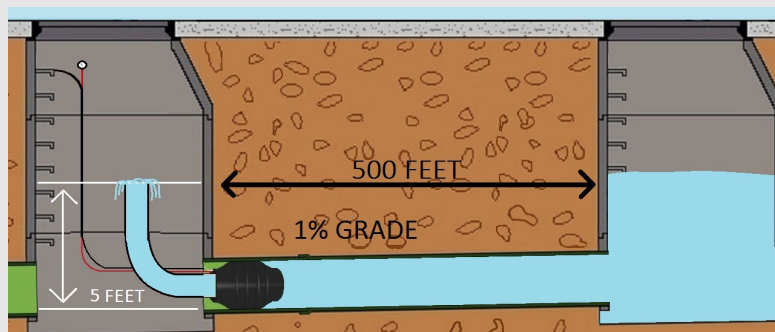
What is Feet of Head or Head Pressure? The depth of the water from the centerline of the plug to the water's surface. Don't get distracted by the volume of water. Only the depth of the water determines how much back head pressure the plug is holding. If the pipe plug is installed in a pipe that is 10' (to the center line of the plug) below the surface of the water then the plug is holding back 10 feet of head. In other words, it doesn't matter if the plug is holding back the Gulf of Mexico or your back yard swimming pool. Ten feet of head is ten feet of head.

What information must you have to calculate feet of head when the water/sewage is backing up in a pipe? Ultimately you need to know the depth of the water that is building up behind the plug. In order to do this you must know the grade or slope of the pipe and the distance the water is backing up behind the plug.

What is the Grade or Slope of a pipe? The percentage the pipe is slanted downward to allow the affluent to flow. Example: If the pipe is on a 1% grade that means the pipe gradually slants downward at a rate of 1 foot every 100 feet of pipe.

Calculating Feet of Head Example: If a pipe is laid on a 1% grade and the water inside the pipe has backed up 500 feet behind the plug then the plug will be holding back five feet of head. See illustration below:

Calculating Feet of Head Example: (Showing the Math): The number of feet the water is backed up in the pipe behind the plug equals 500 Ft multiplied by the slope or grade. In this case equals 1% or .01 = $(500 \times .01 = 5 \text{ feet of head})$ Every additional 100 feet the water backs up would add one additional foot of head to the back pressure.



Stay out of the Danger Zone: Either with water or air, never inflate or deflate a pipe plug unless you are outside of the Danger Zone.

Danger Zone Defined: When a pipe plug is inflated in a pipe, the danger zone is the area directly in front of the pipe plug itself and expands out in a cone shaped area in front of the pipe plug. It also exists above the manhole that the plug is installed in and also expands out in a cone shaped area above the manhole opening.