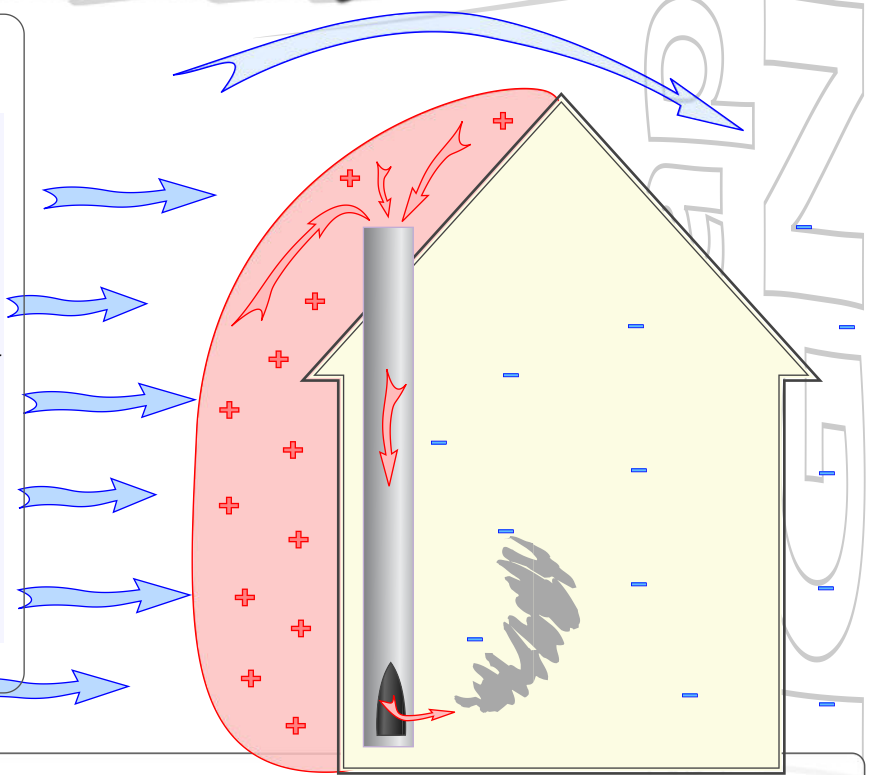


Wind Shadow Downdraft

The Problem

When wind blows from certain direction, it creates a pocket of high pressure on one side of the house called impact pressure. Trapped by wind pressure on one side and the house wall on the other, that high-pressure pocket is trying to escape by pushing air in all directions. If the top of the flue is in that pocket, higher pressure inside of the pocket will tend to equalize with lower pressure inside of the house and air will start rushing down the flue. If the fireplace is fired, this effect might be powerful enough to reverse normal flue flow and blow smoke inside of the house. If you are not using the fireplace, this effect will fill the house with the flue fumes.



Test

As an immediate solution, try to open a window slightly in the same room where the fireplace is. This should equalize inside and outside pressure giving your flue a chance to establish normal operation. However, this window test will significantly decrease efficiency of your fireplace because cold outside air will rush through the window.

This problem is rare but not easy to solve. To make sure this is the case, below are three indicators pointing on the problem.

1. the top of the flue is lower than the roof peak.
 2. If looking from above the house, the flue is on the side of the house.
 3. Downdraft occurs only when wind blows from the same direction where the flue is.
- Only when all three indicators are present, this is the reason for downdraft.

Resolution

The ideal resolution for the problem would be relocating the flue closer to the center of the house but in most cases it will be a very expensive project. We recommend to extend the flue 2-3 feet higher than the roof peak and install the DraftMaster. Installing a draft inducing cap only cannot guarantee resolution of the problem in this case. Draft inducing caps are using wind power to help the flue to draw air but in this case wind flow is destructed and an additional draft, provided by the cap, might not be enough to overcome the problem.

