

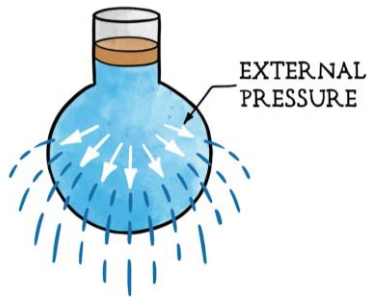
WHAT IS “HYDROSTATICS”?

INTRODUCTION TO HYDROSTATICS SERIES BY MEYERFIRE UNIVERSITY | OCTOBER 2022

SUMMARY

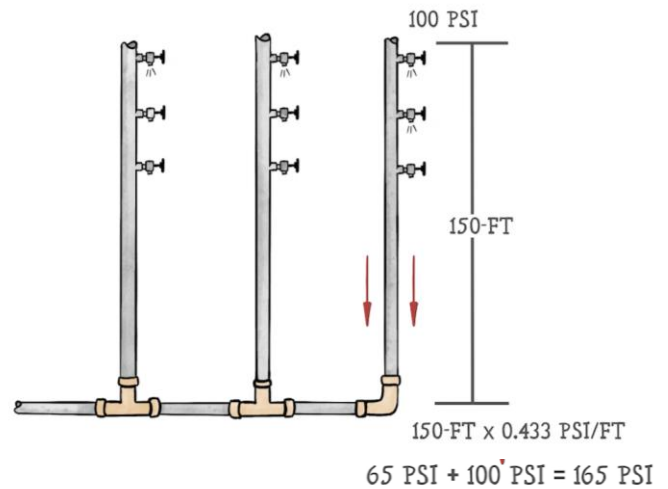
Hydrostatics is the study of fluids at rest. “Hydro” means water, and “statics” means stationary. There are five core principles of hydrostatics:

- #1: A **pressure change at any point** in a confined, incompressible fluid, is transmitted throughout the fluid so the **same change occurs** everywhere.
- #2: Pressure applied from an external source on a confined liquid will be **transmitted in all directions** throughout the fluid.
- #3: Pressure created by a liquid in an open container is directly **proportional to the depth** of the liquid. In fire suppression, this become very important as we gain pressure moving down a depth of water, and we lose pressure as we move up within a water column. We refer to this as elevation pressure loss, or head.
- #4: Pressure created by a liquid in an open container is directly **proportional to the density** of the liquid.
- #5: The **shape or volume of a container has no bearing** on the pressure created by the liquid. This also affects fire suppression and water supply sources. The exact shape of a system has no bearing on pressure due to elevation.



Principle #1 & #2

(Pressure change occurs everywhere, and in all directions)



Principles #3 & #4

(Calculating the increase in pressure at the bottom of a depth of water column)

VIDEO LINK

www.meyerfire.com/university/what-are-the-basic-principles-of-hydrostatics

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