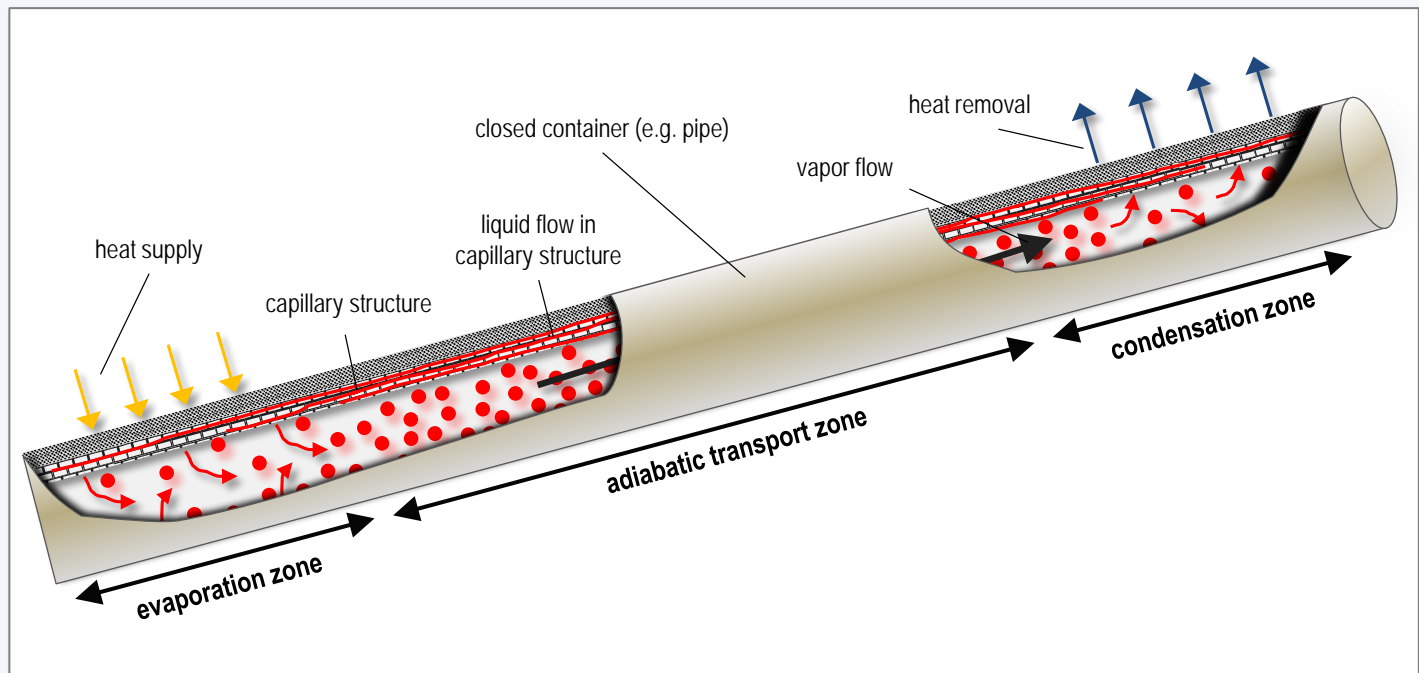


Design and Working Principle of Heat Pipes

A Heat Pipe is generally a **device for heat exchange**. It consists of a closed container (e.g. pipe) with a capillary structure inside it. A working fluid (e.g. sodium, water, methanol) evaporates in the evaporation zone. The convective transport of the working fluid's latent heat enables **extraordinary high specific heat fluxes** and **isothermal operation**. The vapor flows in the pipe to the condensation zone, where condensation releases the latent heat again. The condensate flows back to the evaporation zone through the capillary structure and the heat transport cycle starts again. The available working fluids provide temperatures **from -50°C (Methanol) up to 1000°C (Sodium)**. The utilization of Heat Pipes addresses applications with high specific heat fluxes and allows for **isothermal heat transport** without any moving parts.



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