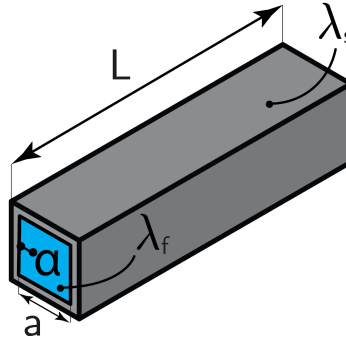


# Nusselt Number 07

Give an expression for the Nusselt number in terms of given variables.



The standard expression for the Nusselt number is:

$$\text{Nu} = \frac{\alpha L_c}{\lambda_{\text{fluid}}}$$

The characteristic length has to be determined. For pipe flow in a rectangular duct pipe, this is the hydraulic diameter (=width) of the pipe.

Which thus is:

$$L_c = a$$

And therefore the Nusselt number can be expressed as:

$$\text{Nu} = \frac{\alpha a}{\lambda_f}$$