2 The rate R of heat flow for conduction in a cylindrical conductor can be found using the equation

$$R = k A -$$

where k is the thermal conductivity, A is the cross sectional area, and L is the length of the conductor where its two ends are at temperatures T_1 and T_2 respectively.

What is the SI base units for k?

A $\mathrm{kg\,m\,s^{-3}}$ **B** $\mathrm{kg\,s^{-2}K^{-1}}$ **C** $\mathrm{kg\,m\,s^{-2}K^{-1}}$ **D** $\mathrm{kg\,m\,s^{-3}K^{-1}}$