A piece of ice of mass 50kg is pushed with a velocity of 5m/s along a horizontal surface.as a result of friction between the piece of ice and the surface, the piece stops after travelling 25m,the ice melted in the process is_____.

Kinetic energy, which ice has:

$$W = \frac{Mv^2}{2}$$

Energy which need to melt peace of ice of mass M_M:

$$Q = \lambda M_M$$

where λ - specific heat of fusion.

All kinetic energy was used to melt ice using friction force:

$$\frac{Mv^2}{2} = \lambda M_M \rightarrow M_M = \frac{Mv^2}{2\lambda}$$

$$M_M = \frac{50kg * (5m/s)^2}{2 * 334 * 10^3 J/kg} = 1.87 * 10^{-3} kg$$

Answer: $M_M = 1.87 * 10^{-3} kg$