11 A metal pellet of mass m and specific heat capacity c hits a steel plate at speed v. During the impact, the kinetic energy is reduced to 25% of its original value. The loss in kinetic energy of the pellet is converted to thermal energy in the pellet.

What is the rise in temperature of the pellet?

A $\dfrac{v^2}{8c}$

B $\dfrac{3v^2}{8c}$

C $\dfrac{mv^2}{8c}$

D $\dfrac{3mv^2}{8c}$