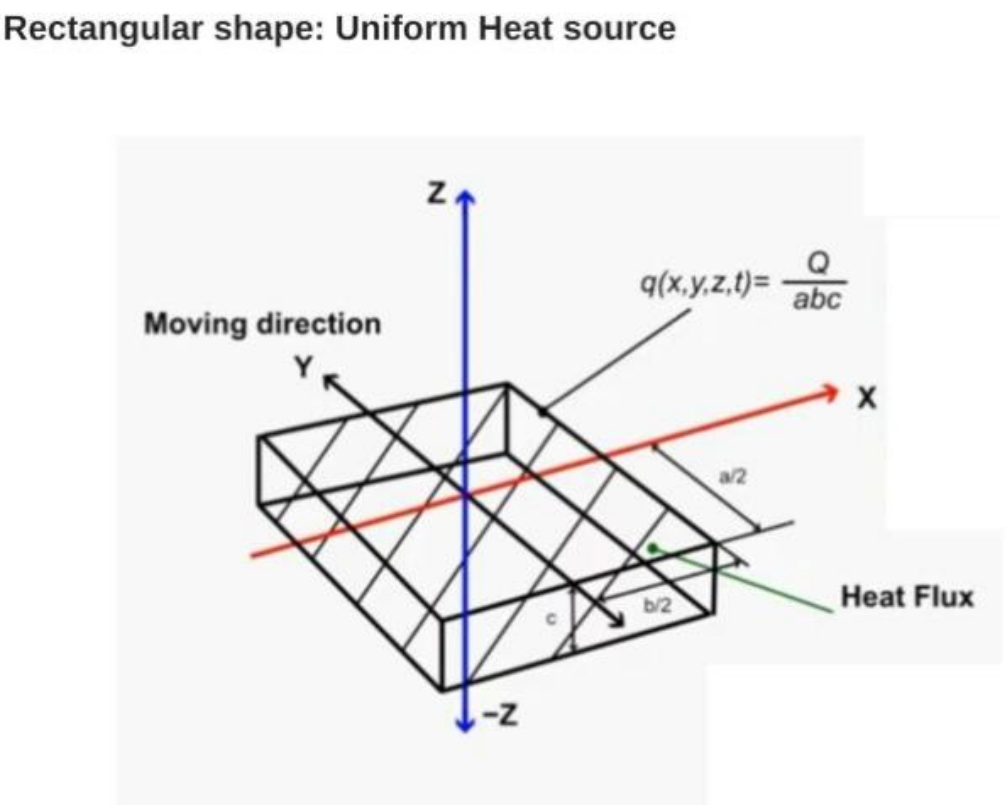
UNIFORM HEAT SOURCE

Heat flux or heat flux density is the flow of energy per unit volume per unit time. It is a vector quantity that has both magnitude and direction. Uniform heat source is used in situations where a constant heat generation over an area/volume is required.

q(x,y,z,t)=heat generation per unit volume.(W/m³)

For a **rectangular** shaped heat source:

qr(x,y,z,t)=Q/abc



(where a,b and c are the length breadth and height of the slab)

For **cylindrical** shaped heat source:
Volume=pi*r^2*d

qc(x,y,z,t)=Q/(pi*r^2*d)

(where r is the radius and d is the height of the cylinder)

Circular shape: Uniform Heat source