Stairway Ventilation

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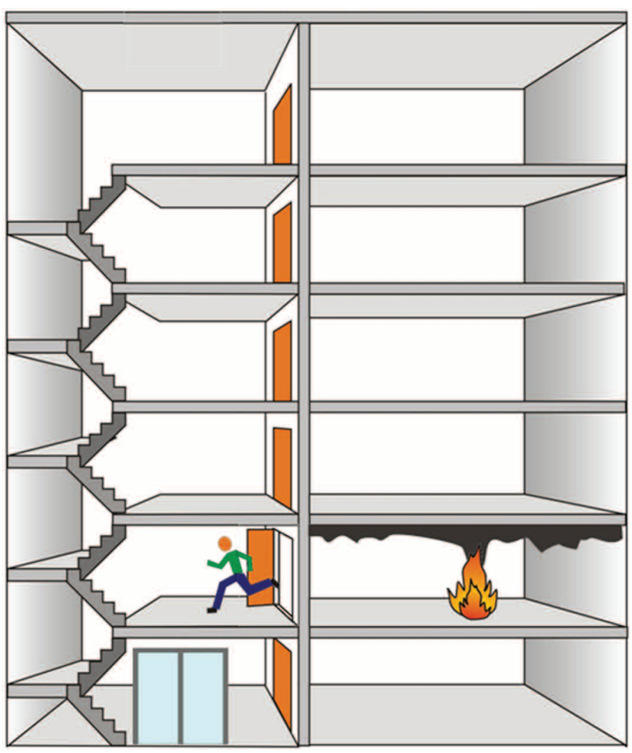
Why do we ventilate stairways?

During a fire often the only means of escape for the building's occupants is the stairwell so a reliable smoke ventilation system is crucial to saving lives.



SANS 10400 Part T: 4.2 Ventilation of stairways in an emergency route

An enclosed stairway which is not pressurized and which is a component of any emergency route in any building that does not exceed 30m in height, shall be:

a) provided with a window or other opening not less than 1m^2 in area for natural ventilation to the outside of the building at each storey level, or

b) naturally ventilated by means of a roof ventilator that has an effective area of not less than 25% of the plan area of the stairwell, and such ventilator shall be permanently open, with equal effective areas of inlet air vents provided at the bottom of such stairway.

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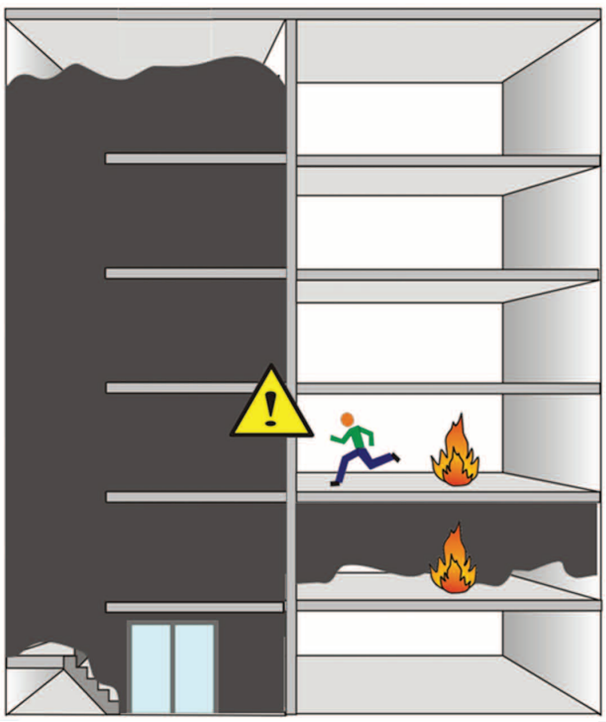
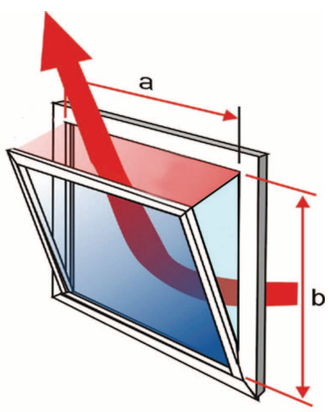


Stairway ventilation must be compliant and designed to the South African National Standard SANS 10400 The Application of National Building Regulations Part T: Fire Protection.

Free Area Calculation



If a = 1m and b= 1m then **max. free area =1m²**

If the vent opens to 60° then free area = area of rectangle a = 1m x 1m= **max. free area = 1m²**

If the vent opens to 0.5m (30°) then free area= a x 0.5 = **0.5m²**

Choosing the supplier of your smoke control system might be a question of life and death

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