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Posted by Anonymous on Fri, 2015-03-06 12:45

Number of exit doors in labs and prep rooms: How many exit doors must a lab and a prep room have? Should they be on opposite sides of the lab? Are sliding doors allowed? Should the doors open outwards? How close to the fume cupboard can the exit door be?

Voting:



Average: 5 (1 vote)

Laboratory Technicians:

Laboratory Technicians

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number of exit doors in labs and prep rooms

Submitted by sat on 31 March 2015

Answer reviewed 23 February 2023

The question of access and egress in school science laboratories deserves careful consideration and risk assessment. Science areas use higher-risk materials and equipment than normal classrooms. In an emergency situation, the logistics of the rapid egress of in excess of 30 people in an emergency need to be considered. Where there are a number of students working in a hazardous environment, a local risk assessment should inform best practice, and this is most easily incorporated at the planning stage prior to construction.

Science ASSIST has developed [GUIDELINES for the design and planning of secondary school science facilities in Australian schools](#), which contains a chapter on emergency management *resources and states*:

“In a school science laboratory a single exit door may not be adequate to allow safe, swift escape from a hazardous situation. For instance, a fire, gas or electrical hazard, or chemical spill may occur near the exit door obstructing safe egress. In a teaching laboratory there may be as many as 30 people who need to make a quick exit.

Consideration of the exit provisions should include the behaviour of the students or staff members in an emergency situation. Aisles and doorways may need to be wider than the minimum to accommodate exit for a large number of people. Exit signage must be prominent and clear.

A risk assessment considering egress should be conducted to ensure that escape from an emergency situation in a laboratory environment is swift, direct and safe.²⁴ The following provisions are considered best practice

- Preparation laboratories and teaching laboratories should have at least two separate means of egress; at least one with access to the outside or to a corridor that has external exit.
- Where there are two or more doors the distance between them should be the lesser of 12.5 m or 20% of the perimeter of the room. For example, in a 10 x 11 m teaching laboratory the distance between exits should be at least 8.5 m.
- Small laboratory sub-compartments such as a chemical storeroom may have only one egress door provided that the distance of travel to the exit from any point in the room does not exceed 7 m.
- The doors should have a glazed vision panel so that a person can see what is on the other side of the door. In a fire door a vision panel must not compromise the fire rating of the door.
- The doors must open in the direction of egress, and be not lockable against egress.
- Where doors open to a corridor they should be recessed so they do not impede traffic in the corridor.”¹

Additional considerations

- A **chemical storeroom**, usually being a much smaller room, would normally require only one exit. For reasons of security of the stored chemicals, we would recommend that chemical store rooms should have just one door that opens outwards, is capable of being secured in the open position, is lockable from the outside, but able to be opened from the inside without the use of a key.
- **Exit doors** should open in the direction of egress. Sliding doors are therefore not appropriate for this use.
- Any door, including an exit door, must not be situated closer than 1.5 metres from the front (sash) of a **fume cupboard**, or closer than 1 metre from the side wall of a fume cupboard.

Siting of Exit Doors and Fume Cupboards

The requirements for a fume cupboard to be at least 1.5 metres (sash) and 1 metre (side wall) from a door including an exit door are specified in AS/NZS 2243.8.2014. These requirements are set to facilitate the efficient operation of the fume cupboard and to avoid undue interference of air flow caused by proximity to a doorway. These requirements are shown in [GUIDELINES for the design and planning of secondary school science facilities in Australian schools](#) and the following illustration taken from AS/NZS 2243.8.2014.2

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FIGURE 1 MINIMUM SPACINGS THAT AVOID UNDUE DISTURBANCE OF AIRFLOW

Egress requirements of the Building Code

Schools are classified as class 9b buildings.³

More detailed information for minimum requirements regarding access and egress can be found on National Construction Code website, See: <https://ncc.abcb.gov.au/editions/ncc-2022/preview/volume-one/d-access-an...>

References

1 Science ASSIST. 2017. GUIDELINES for the design and planning of secondary school science facilities in Australian schools. Retrieved from the Science ASSIST website: <https://assist.asta.edu.au/resource/4175/guidelines-design-and-planning-...>

2 Standards Australia. 2014. AS/NZS 2243 *Safety in Laboratories, Part 8: 2014 Fume cupboards*. Sydney, Australia. Reproduced by ASTA with the permission of Standards Australia Limited under licence CLF1222asta. Copyright in AS/NZS 2243.8:2014 vests in Standards Australia [and Standards New Zealand]. Users must not copy or reuse this work without the permission of Standards Australia or the copyright owner.

3 Australian Building Codes Board. (2022, May 9) *Building classifications*, Retrieved from the Australian Building Codes Board website: <https://www.abcb.gov.au/resource/understanding-ncc/building-classifications>

Queensland Department of Education. 2022, Design principles and technical standards for Department of Education facilities, Retrieved (4 February 2023) from the Queensland Department of Education website: Design principles and technical standards for Department of Education facilities (qed.qld.gov.au)

South Australia Department of Education and Children's Services. (nd). *DECS Facilities design standards and guidelines*. Retrieved (19 February 2023) from the Department for Education South Australia website: <https://www.education.sa.gov.au/working-us/builders-design-and-maintenan...>

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