



Advice Note

Ventilation and Temperature (Covid-19 schools/workplaces)

The current DE guidance is to **have windows and doors open to ensure good ventilation.**

This is set out in the DE Guidance New School Day (revised 13 August) states:

- ***The opening of doors and windows should be encouraged to increase natural ventilation and to reduce contact with door handles.***
- ***However, propping open of doors into corridors, external doors, security access systems and any other fire safety doors is prohibited.***
- ***It should be sufficient for windows to be open dependent on climates and for existing mechanical ventilation where desired to achieve thermal comfort.***
- ***A ventilated space should be available for pupils (with appropriate supervision) / staff who become symptomatic to wait in until they can be collected or safely get home.***

The EA advice is that **good ventilation needs to be maintained in all circumstances.**

The EA Risk Assessment template states:

Where possible, all spaces should be well ventilated using natural ventilation (opening windows) but that appropriate H&S protocols should be adhered to.

Fire Doors

Advice from EA Environmental Compliance Unit is that **existing fire safety measures should not be compromised**, and **fire doors must remain closed** to ensure safe compartmentalisation in the event of a fire.

This is in line with legislative requirements.

HSENI state that workplaces should **only leave non-fire doors open** to reduce the amount of contact with doors and potentially improve workplace ventilation

The 'challenge'

Even with the heat running all the time in school, and the classroom warm and cosy in the morning, the temperature outside is such that when the windows are open the classroom is cold.

Ventilating indoor work areas, whilst at the same time ensuring a comfortable working temperature, will become more and more challenging as the weather gets colder.

Natural ventilation significantly depends on the temperature difference between the indoor and the ambient air and the current wind situation. As a result, a sufficient natural ventilation cannot always be guaranteed.

Practical suggestions for ensuring adequate ventilation

- Caretaker/Maintenance team should check ventilation is functioning well. Airbricks should not be obstructed. Windows must be able to be safely opened. Ventilations grids need to be kept clean, so that the air supply is not obstructed. Any mechanical ventilation systems should be checked for their efficient functioning by the maintenance company.
- Start ventilation ahead of the school/college day and allow it to continue after classes have finished as cleaners and other maintenance staff will be working in those rooms.
- Set air handling units to maximise 'outdoor air' over recirculation.
- Ventilate classrooms and other areas properly between classes and uses, including at breaks and at lunchtime. This is one of the most important measures to ensure effective ventilation and would involve opening windows fully for a short period of time.
- Any ventilation at other times is better than none, so keeping the windows open a crack will help to reduce the concentration of any virus in the air.

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- Staff should be instructed how to achieve the most effective ventilation – e.g. opening top windows and moving obstructions such as curtains/blinds.
- Make sure that ventilation facilities are not obstructed or blocked by curtains or furniture.
- Use ceiling fans or desk fans to prevent pockets of stagnant air, provided good and external ventilation is maintained.
- Where poorly ventilated spaces cannot be adapted to improve ventilation, they should not be used as a teaching location.
- If there are any existing issues with the functioning of the heating system, these need to be addressed as soon as possible since any breakdowns will make it even more difficult to maintain ventilation and a comfortable working environment.
- As well as through ventilation, the risk of aerosol transmission can be reduced by limiting activities that have been shown to increase aerosol generation, such as aerobic exercise, singing and talking loudly, so such high aerosol-generating activities may need to be limited in smaller and less well-ventilated classrooms.

Why is this an issue? Some recent research

Recent research from Spain suggests that if a classroom is ventilated during the lesson, either with fresh air or mechanically, and the class is stopped after an hour in order to completely refresh the air, the risk drops dramatically.¹

The same research suggests that schools account for around 6% of coronavirus outbreaks recorded by Spanish health authorities.

The dynamics of transmission via aerosols in the classroom change completely depending on whether the infected person – or patient zero – is a student or a teacher.

Teachers talk far more than students and raise their voices to be heard, which multiplies the expulsion of potentially contagious particles.

In comparison, an infected student will only speak occasionally.

According to the Spanish National Research Council (CSIC) guidelines, the Spanish government has recommended that classrooms be ventilated – even though this **may cause discomfort in the colder months** – or for ventilation units to be used.

Research has shown that the coronavirus is spread through the air, especially in indoor spaces, with scientists now openly acknowledge the role played by the transmission of

¹ <https://english.elpais.com/society/2020-10-28/a-room-a-bar-and-a-class-how-the-coronavirus-is-spread-through-the-air.html>

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aerosols – tiny contagious particles exhaled by an infected person that remain suspended in the air of an indoor environment.

The article (link below) provided further clarification:

<https://english.elpais.com/society/2020-10-28/a-room-a-bar-and-a-class-how-the-coronavirus-is-spread-through-the-air.html>

There is also a useful article in the Spanish Press which shows that researchers are now insisting on the need to review school ventilation protocols, and to consider purchasing mechanical ventilation systems in areas with less benign weather conditions. "If a school is thinking about closing windows, it will have to use tools such as CO2 sensors and air purifiers with HEPA filters:

<https://english.elpais.com/society/2020-10-12/as-cold-sets-in-spanish-schools-face-dilemma-leave-windows-open-or-risk-coronavirus-contagion.html>

School Staff are getting concerned

Staff are reluctant to reduce the ventilation and this means that the temperature can drop

- Schools have told pupils to wear more layers.
- Many staff are already wearing a coat in school.

NEU believe that schools need additional guidance to give to parents to expect a cooler school than normal.

There are already concerns that parents and pupils will start to complain about the cold when it falls below the recommended legal level of 16°C.

The Temperature drops!

16°C is the legal minimum workplace temperature, but the NEU has always argued for a minimum of 18°C.

Regulation 7 of the Workplace (Health, Safety and Welfare) Regulations (NI) 1993 suggests a minimum of 16°, the **Department of Education's Building Handbooks** state that it should be 18° and this is the temperature recommended by NEU.

In addition, the Handbook states that,

"the desired room temperature is to be achieved within 30 minutes of occupation on 60% of occupied days during the heating season".

It is good practice that every classroom has a thermometer, and this should be provided by the school, not by you!

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Employers are under a general duty to ensure the health, safety, and welfare of employees, so far as is reasonably practicable.

This requirement extends to protecting employees and others from temperature extremes.

Cold temperatures

The Workplace (Health, Safety and Welfare) Regulations (Northern Ireland) 1993 stipulate that during working hours, temperatures in workplaces (including schools) should be **reasonable**. The employer must provide a suitable number of thermometers to enable the temperature to be checked throughout the workplace.

The accepted temperatures for schools are set out below:

Use of area	Min temp
Lower than normal level of physical activity, e.g. sick rooms	21°C
Normal level of physical activity, e.g. classrooms and libraries	18°C
Higher than normal levels of physical activity, e.g. gyms and drama workshops	15°C

Closure due to cold temperatures

If satisfactory arrangements cannot be made to provide adequate heating, consideration should be given to closure. A decision can be made by the principal to send pupils home if appropriate, but the principal cannot be compelled to close the school by the advice, vote or decision of the staff.

Parents would have to be given notice in writing of a closure.

At least 24 hours' notice is reasonable in primary schools, as immediate closure could create risks to safety at unsupervised road crossings or in empty homes, which are more dangerous to children than low temperatures.

Regulation 7 Temperature in indoor workplaces

- (1) During working hours, the temperature in all workplaces inside buildings shall be **reasonable**.
- (2) A method of heating or cooling shall not be used which results in the escape into a workplace of **fumes, gas or vapour** of such character and to such extent that they are likely to be injurious or offensive to any person.
- (3) Enough **thermometers** shall be provided to enable persons at work to determine the temperature in any workplace inside a building.

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The temperature in workrooms should **provide reasonable comfort without the need for special clothing.**

Where such a temperature is impractical because of hot or cold processes, all reasonable steps should be taken to achieve a temperature which is as close as possible to comfortable.

Other suggestions

The NEU view is that to help with the balance between ventilation and warmth, **uniform and dress codes should be relaxed to allow staff and students to dress more warmly.**

Schools and colleges should also consider the **installation of CO2 monitors.**

In teaching and learning spaces, carbon dioxide is taken to be the key indicator of ventilation performance for the control of indoor air quality.

A **CO2 monitor**, with traffic light indications, sited away from windows, can be used to show a precise reading of the CO2 level in a room to identify where there may be challenges in ensuring adequate ventilation.

The H&S Risk Assessment Process

Ventilation and temperature should be assessed as part of the wider risk assessment process:

The approach taken, as with any Risk Assessment should involve:

- ✓ **identifying the hazard**
- ✓ **deciding who may be harmed and how**
- ✓ **assessing the risks and preventive measures required**
- ✓ **reviewing the findings.**

Points to consider:

- Check whether the **risk assessment has been updated** to address the issue of ventilation.
- The **individual risks to staff** who are more medically vulnerable need to be re-assessed too.

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- Check the position of medically vulnerable staff. Those most at risk are the clinically extremely vulnerable (CEV) followed by the clinically vulnerable (CV).
- The NEU urges schools and colleges to permit those who are clinically extremely vulnerable to work from home, and in areas of intervention, allow those who are clinically vulnerable.
- Where these staff are in school/college, it is imperative that they **do not spend extended periods of time in poorly ventilated classrooms**.
- Identify any rooms which present a greater hazard either because they are smaller but contain the same number of pupils as larger classrooms, or because there are other factors preventing ventilation, and seek to agree that these are only used by smaller groups, or not at all.
- Urge that **CO2 monitors are made available** so that measurements can be taken in all working areas. Where necessary, further action should then be taken to increase the flow of outdoor air into the space or bring in HEPA air cleaners.

Risk assessments must be tailored to the individual school; there is no such thing as a one-size-fits-all assessment, so simply adopting a model is not an option for any employer.

Risk assessment is also a dynamic process and needs to be kept **under regular review**.

The Assessments for schools opening fully to all students in September should be **revised after the mid-term break**, to take account of changing circumstances, the prevalence of the virus, and the weather!

If you need further NEU help or support:

- email ni@neu.org.uk
- phone **028 9078 2020**.

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NEU

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