

New Regulatory Requirements for

VENTILATION IN EXISTING HOMES AND YOUR RESPONSIBILITY



INTRODUCTION

On 15 June 2022, new and updated building regulations and requirements in relation to the installation and means of ventilation in dwellings in England were introduced. In Scotland, Northern Ireland and Wales, similar requirements are in place.

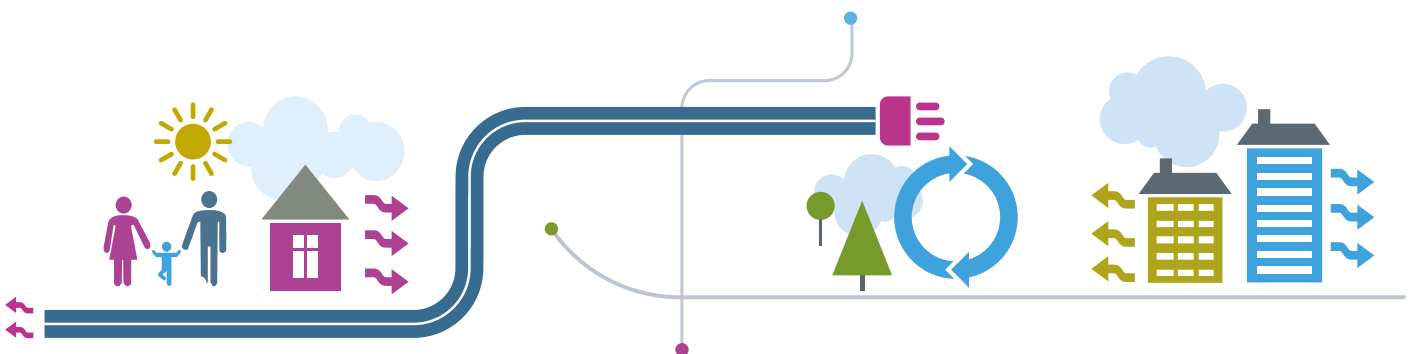
Most building work being carried out in England must comply with these new building regulations in order to protect the health and safety of people living in buildings. Therefore, it is your responsibility as a building contractor, sub-contractor or installer to ensure that your work complies with and meets all the relevant requirements of the building regulations. It is necessary to follow the correct procedures and meet technical performance requirements to make sure that work is safe and fit for purpose under inspection from a buildings inspector or building control officer.

In these guides, we focus on ventilation installation only and provide summary guidance of the updated regulations and requirements. Further guidance on other building work should be obtained from the **government’s website**.

Ventilation in a dwelling is vital for the health and well-being of its occupants. If the performance or fitting of ventilation units or systems in a dwelling does not meet specific requirements and performance standards, levels of indoor air pollutants may rise above safe levels and you may be breaching regulations. High levels of air pollutants can have a potentially serious impact on the health of those living in a dwelling, with indoor air pollution contributing to conditions including asthma, heart disease, dementia and even cancer.¹

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Reference:
1. Indoor Air Quality Guidelines for selected Volatile Organic Compounds (VOCs) in the UK. Public Health England (p. 3).

Part 1

VENTILATION REQUIREMENTS WHEN UNDERTAKING ENERGY EFFICIENCY MEASURES

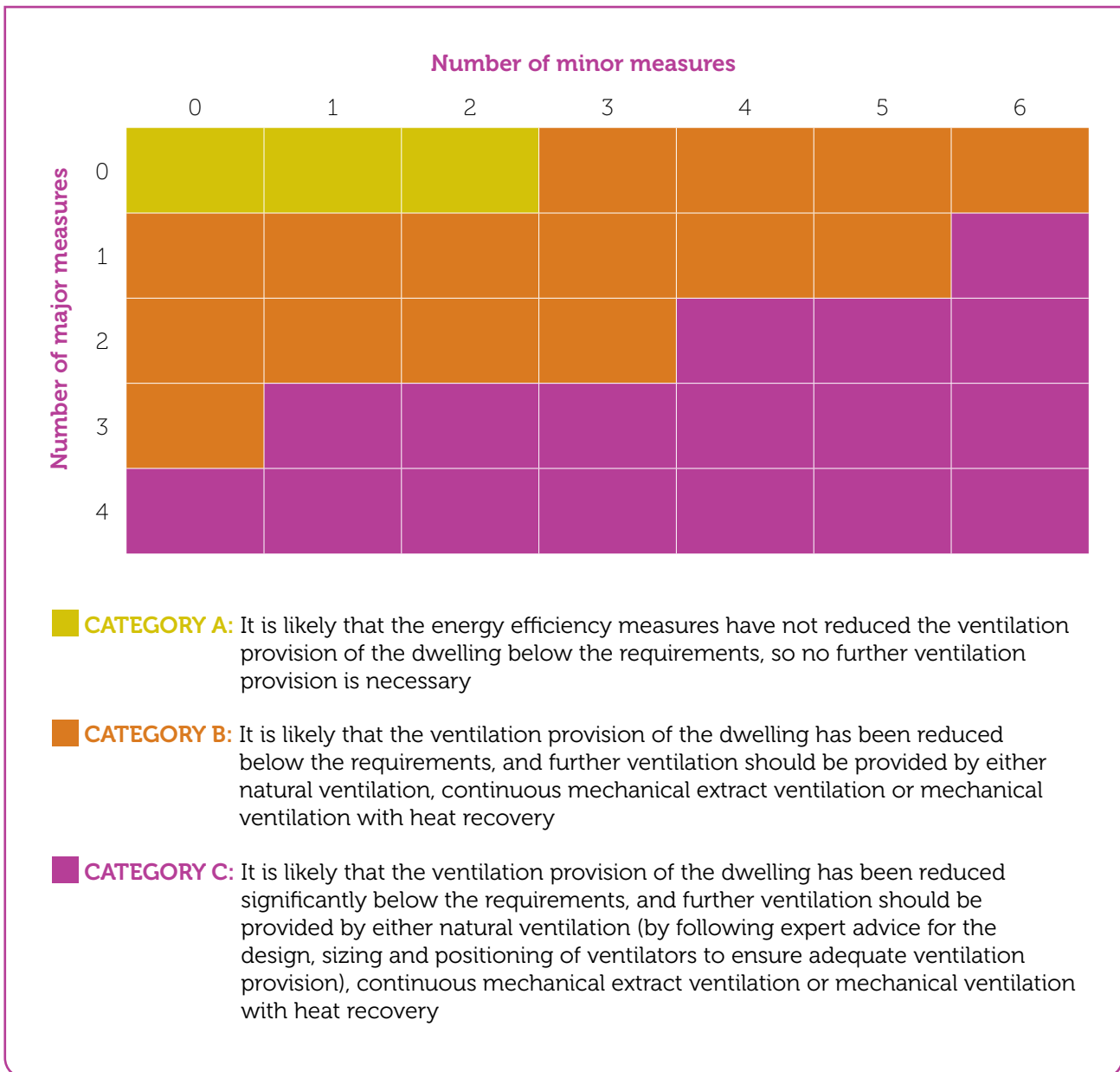
Many existing dwellings are ventilated through natural air flow rather than specific ventilation installations. Therefore, energy efficiency measures carried out on existing dwellings will reduce natural air flow and may cause the dwelling to become under-ventilated and potentially dangerous for occupants.

Any building work carried out on an existing dwelling must not reduce the level of ventilation unless it can be demonstrated that the ventilation provision after the work is completed meets the minimum standards of building regulations. When carrying out energy efficiency measures to an existing dwelling, an assessment should determine what, if any, additional ventilation provision is needed based on the estimated impact of the work.

When calculating the impact of building work on ventilation, it is important to consider the planned work plus any energy efficiency measures fitted since the original dwelling was constructed to account for the accumulation of measures. Where specific energy efficiency measures are not detailed below, please use the most similar category instead.

ENERGY EFFICIENCY MEASURE	CATEGORY
<p>Roof insulation:</p> <ul style="list-style-type: none"> Renewing loft insulation, including effective edge sealing at junctions and penetrations Loft conversions or works that include changing a cold loft (insulation at ceiling level) to a warm loft (insulation at roof level) 	<p>Minor</p> <p>Minor</p>
<p>Wall insulation:</p> <ul style="list-style-type: none"> Installing cavity wall insulation to any external wall Installing external or internal wall insulation to less than or equal to 50% of the external wall area Installing external or internal wall insulation to more than 50% of the external wall area 	<p>Minor</p> <p>Minor</p> <p>Major</p>
<p>Replacement of windows and doors:</p> <ul style="list-style-type: none"> Replacing less than or equal to 30% of the total existing windows or door units Replacing more than 30% of the total existing windows or door units 	<p>Minor</p> <p>Major</p>
<p>Draught-proofing (other than openings):</p> <ul style="list-style-type: none"> Replacing a loft hatch with a sealed/insulated unit Sealing around structural or service penetrations through walls, floors or a ceiling/roof Sealing and/or insulating a suspended ground floor Removing chimney or providing another means of sealing over a chimney, internally or externally 	<p>Minor</p> <p>Minor</p> <p>Major</p> <p>Major</p>





With the drive to improve energy performance of existing homes it is likely that most homes will fall into Category B and will, therefore, require some form of additional ventilation installed in order to comply with the building regulations.

For details of ventilation solutions that meet required standards, together with expert advice and support following the installation of energy efficiency measures, please visit the **BEAMA website**.



Part 2





SELECTING AND INSTALLING SUITABLE EXTRACT VENTILATION

Effective ventilation provides a safe and healthy environment for the occupants of a dwelling by removing excess moisture and indoor air pollutants.

All ventilation work must comply with the relevant requirements of building regulations, and this guide sets out requirements for the installation and performance of a mechanical extract fan in a single room in the home.

Selecting an extract fan

There is a wide range of extract fans available, depending on room type and functionality, and it is essential to choose a model that performs to the required standards in order to comply with building regulations and building control inspections.

THE MINIMUM EXTRACT RATES FOR INTERMITTENT EXTRACT FANS ARE AS FOLLOWS:			
	Kitchens – 60 l/s (or 30 l/s if the extract is a cooker hood)		Bathrooms – 15 l/s
	Utility rooms – 30 l/s		Sanitary accommodation (toilets) – 6 l/s

Where any wet room has no external walls the minimum extract rate should be four air changes per hour.

Fitting an extract fan

1. All installations of intermittent extract fans with either manual or automatic control must provide the minimum required extract rate. NOTE: The stated extract rate of a fan may be lower when installed due to resistance from ductwork, grilles etc. It is the installer's responsibility to ensure that the fan can deliver the required extract rate for the room once the installation is complete. The fan should not operate near maximum capacity under normal operating conditions. Extract fans that have been performance tested to meet the requirements of building regulations for specific rooms under typical installed conditions are listed [here](#).
2. Flexible ductwork should only be used for final connections, should never exceed 1.5 m in length and should be pulled tight. Duct connections should also be mechanically secured and sealed to prevent leaks.
3. Doors to the room where the fan is located should be adapted to allow sufficient air flow when the door is closed; a door undercut of 10 mm above the final floor covering would be sufficient.
4. The installer should ensure that sufficient fresh air can enter the building (e.g. through trickle ventilators in window frames) to replace the air extracted by the fan. Background ventilators to the outside should be fitted if there is any doubt. The specific fan power for the system should not exceed 0.5 W/l/s
5. The final extract rate from installed fans should be measured to make sure that minimum flow rates are achieved.

NOTE: This is a summary of some of the critical requirements of the new building regulations for ventilation in England. For details of the full regulations, please visit: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1045918/ADF1.pdf



Part 3

COMMISSIONING NEW OR UPGRADED VENTILATION INSTALLATIONS IN DWELLINGS

Commissioning refers to the process of bringing an installation into operation, ensuring that it is in good and effective working order and that its functionality for the end-user has been tested and verified.

Completing and submitting a commissioning sheet is a **legal requirement** under updated building regulations and enforceable by a local authority building control service or an approved private sector building inspector. If the installer is registered with a recognised competent persons scheme, such as the National Inspection Council for Electrical Installation Contracting NICEIC, they may be able to self-certify some or all of the work being carried out.

The best commissioning process is one that is planned from the start of the project, as this can save time and costs. Here is our quick overview of the **required** actions for installers:

1. RECORD, MEASURE, CHECK

- Record the actual equivalent area and location of installed background ventilators
- Measure and record air flow rates (ventilation system supply and extract terminals and stand-alone extract fans)
- Check whether background ventilator controls work and that they open, close and operate correctly
- Check the quality of the installation of the ventilation product to ensure it is correctly mounted within the wall or window aperture
- Check that any run-on timers are set to at least 15 minutes
- Check all ductwork and terminals have been installed in accordance with the design criteria and are in good condition with no obvious defects that will affect performance. Check that air flow direction is correct at each room terminal and that there are no abnormal or excessive noises from the ventilation system on start-up, when running in background ventilation mode or when running at a high rate

2. COMPLETE

Complete and sign the required commissioning forms. A downloadable version is available [here](#).

3. Provide

Provide copies of all forms to the homeowner within 5 days for new dwellings or within 30 days in all other cases. These must be accompanied by clear and non-technical information so that ventilation systems can be operated effectively; this should include specific instructions on how and when to use the ventilation system, including information on the intended use of available fan settings and advice on when and how the system components should be cleaned and maintained. For installations in new dwellings, a full 'Home User Guide' should be provided in addition to the operating and maintenance instructions.

*Note: This is a summary of some of the critical requirements of the new building regulations for ventilation in England. For further details on the tests and checks required, please see page 31 of the **Buildings Regulations**.*



FURTHER INFORMATION:

HM Government Building Regulations. Ventilation. Approved Document F, Volume 1:

Dwellings. 2021 edition – for use in England: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1045918/ADF1.pdf

BEAMA Guidance to support the new Part F Approved Document for dwellings in England:

<https://www.beama.org.uk/resourceLibrary/beama-guidance-on-part-f-of-the-building-regulations-for-dwellings-in-england.html>

BEAMA White Paper – BETTER VENTILATION BETTER HOMES BETTER HEALTH:

<https://www.beama.org.uk/resourceLibrary/beama-white-paper---better-ventilation-better-homes-better-health-.html>

BEAMA Training Fact Sheet – Details of the training course for individuals looking to demonstrate competence to work on the supply, design, installation, commissioning and handover of Domestic Ventilation systems:

<https://www.beama.org.uk/resourceLibrary/domestic-ventilation-training-fact-sheet.html>



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