



## EPC Requirements

Buildings without  
fixed conditioning equipment

# No fixed heating

## DCHI discussion document

There are conflicting views on the relevance of fixed conditioning equipment. To try and shed some light on the debate we have prepared this summary for discussion by relevant interested parties.

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## Is an EPC required?

*Answering this question requires interpretation of the regulations and in the absence of a test case anything we suggest can only be a point of view and not definitive guidance.*

The regulations require an EPC for buildings in which energy is used to condition the indoor climate. This is logical because the purpose of the EPC is to identify the efficiency with which energy is used to condition the building and the effectiveness of the building at utilising and retaining that conditioning (heating or cooling). This is generally done (except in level 5 complexity buildings) using simplified building energy modelling (SBEM).

It does not matter in the regulations whether the conditioning is done by fixed or portable conditioning equipment; if energy is used to condition the building an EPC is required. This is also logical since the need to use the energy effectively and to retain it within the building is the same for all buildings. The cost of that energy to the occupier is the same whether the equipment that used it was fixed or portable. The environmental impact of using that energy is the same whether the equipment that used it was fixed or portable.

There is no valid basis for arguing that a building does not use energy to condition the indoor environment just because it does so using portable equipment. Equally there is no valid basis for arguing that the importance of reducing energy consumption in a building is any less if the energy is consumed by portable equipment rather than fixed.

So there we have it. The only logical interpretation is that an EPC is required for a building that uses energy to condition the indoor climate, irrespective of whether the conditioning equipment is fixed or portable.

## How do we know the building uses energy to condition the indoor climate?

This is where the application of the regulation becomes slightly less clear. Absence of evidence is not the same as evidence of absence.

If the building has fixed conditioning equipment that is reasonable evidence that energy will be used by that equipment to condition the building.

If the building does not have fixed conditioning equipment that is most certainly not reasonable evidence that energy will not be used to condition the building. In the majority of buildings (or spaces within buildings) unless they are purely storage or industrial workshop (includes small scale workshops - see footnote), spaces without fixed conditioning equipment will be conditioned using portable conditioning equipment.

Arguably some of these buildings may be conditioned to a lesser degree than typical, hence the fact that it has not been worth the investment to install fixed conditioning equipment, but they will be conditioned. This is evidenced by the fact that when an assessor walks around an in-use building of pretty much any category other than storage or industrial workshop they will find portable heaters in use or available ready for use when it gets colder. These portable heaters will be used, when the weather calls for it to condition the building the same as fixed heaters would. That energy use is a cost to the occupier using the building and has a carbon footprint the same as it would if the heaters were fixed. There is the same need to ensure these heaters are efficient and appropriately controlled and that the building retains the heat they introduce as would apply if they were fixed.

So logically a building that uses portable heaters has the same requirement for an EPC as a building that used fixed ones.

The problem is that because portable heaters are by definition portable, they may be taken out of the building or stored away when not in use and not visible. Basing the interpretation of whether energy is used to condition a building (and whether an EPC is required) on the presence or absence of something portable is clearly not viable so it has to be based on something more robust.

The regulations require an EPC to be based on assessment under typical occupancy conditions to provide a like-for-like comparison between buildings. There are other regulations which require provision of suitable working conditions for most types of work. For example, an employee cannot be expected to work through the winter in an unconditioned office. On cold days there is a legal obligation to heat the space. Therefore, it is logical and appropriate to assume that an office space will use energy to condition the climate, irrespective of whether it has fixed heating, portable heaters present or would need portable heaters to be brought in.

So, unless the space is for a use type that would not require heating i.e. storage or industrial workshop, it is a space for which energy will be used to condition the indoor environment under typical use. If this interpretation is accepted then an EPC must be provided to indicate to an incoming owner/occupier the cost of using that building in typical fashion.

## How to treat spaces without fixed conditioning equipment

The conventions provide guidance in respect of which activity types have an expectation of heating. This is based on those activity types where there would be a legal obligation for an employer to provide heating (as a minimum) if they were to employ somebody to use the space for the activity type it is being sold or rented as suitable for.

These spaces are to be treated as being conditioned, in the absence of fixed conditioning they will be assumed to be heated by portable heaters. The most likely (lowest outlay) is portable electric heaters so that is the heating type to be used in assessment. This is an entirely logical approach and is also consistent with the frequent presence of portable electric heaters in many such spaces, ready for use on colder days.

The conventions have no status in respect of determining whether an EPC is required; they simply determine how a building is modelled if an EPC is produced. They do however appear to be consistent with the only sensible approach to interpreting the regulations.

There is one possible exception to the above statement and this relates to toilets. It is reasonable to assume within a conditioned building that the toilet will be conditioned in some way and this is reflected in the convention requirement to treat a toilet as conditioned. However, in a building which has no fixed conditioning and no occupancy type that would require conditioning, it is highly unlikely that the toilet would be conditioned.

It seems reasonable to argue that a building which is storage or industrial workshop (including small scale workshops) without fixed conditioning but containing a toilet does not have any requirement for heating for typical occupancy and therefore does not require an EPC. It may also be that the convention should deal differently with a toilet in a building that has no other space conditioned.

## Worst case scenario

The thing that would completely undermine the purpose of the Energy Performance of Buildings regulations would be to determine that an EPC is only required for buildings with fixed conditioning equipment and/or the thermal efficiency only needs to be considered for areas within buildings having fixed conditioning equipment.

If there is a need to condition these spaces, and for use types such as offices etc there clearly is, energy will be wasted from poorly insulated envelopes and that needs to be reduced as much in these buildings as in others. Energy will be used less efficiently by portable equipment that potentially it would be by installing well specified fixed equipment and that needs to be addressed.

Basing decisions purely on the presence of fixed conditioning equipment:

- a) Will exclude a significant proportion of buildings that largely or solely use portable conditioning from having their energy efficiency assessed, from having recommendations for improving energy efficiency and from other regulations (e.g. the Private Rented Sector (PRS) regulations) that require improvement to their energy efficiency. It would be a major setback to government initiatives to reduce CO2 emissions.
- b) Where an EPC is produced but spaces requiring conditioning but without fixed equipment are ignored, will understate the likely energy requirement in typical use for prospective buyers or tenants. It creates what must be considered a property misdescription.
- c) The loophole it creates for building owners to avoid improving the energy efficiency of their buildings would be a nightmare scenario for the PRS regulations. If a building does not reach band E or above, then simply remove fixed conditioning equipment. It will continue to be just as inefficient, or become worse, but it will not have to comply with any regulations regarding its energy efficiency. That cannot be the intention of the regulations and therefore that cannot be a justifiable interpretation of the regulations.

## What are we potentially missing?

The regulations refer to using energy to condition the indoor environment and the interpretation of conditioning is that it does not include lighting or domestic hot water (DHW).

The amount of DHW is unlikely to be significant in a building without fixed conditioning. If there is significant hot water, it will almost certainly be for process use and outside the scope of SBEM modelling. Lighting however is very different.

Lighting in buildings with little need for conditioning of the indoor environment can be significant and will be by far the highest energy use in the building. With the most efficient lighting being more than five times more efficient than the least efficient, energy savings in excess of 80% (of the buildings largest energy use) are achievable. What's more, electricity is a highest cost, highest carbon impact fuel so one which it most beneficial to reduce usage of.

If buildings without fixed conditioning, but some occupancy that will require portable conditioning, are excluded from the need for an EPC, then they are also excluded from the PRS regulations. The result; a significant amount of inefficient lighting in buildings where the primary energy use is lighting will go unrecognised and the carbon impact of those buildings will not be addressed. The UK commitment to carbon reduction cannot afford to have

buildings with high lighting energy use ignored just because they have relatively low conditioning requirements, or their conditioning is by portable rather than fixed equipment.

## Footnote

Small scale workshops are a category that may or may not require conditioning. They range from:

- a) the mechanic's workshop where the roller doors are open most of the time and the indoor environment is unconditional, through
- b) the builder's storage unit with a working space to pre-cut materials before taking them to site where workshop use is sporadic and conditioning unnecessary, to
- c) the production type workshop where people spend the day sat at a workstation and need an environment similar to office condition levels

Small scale workshops are the only building / activity type where it is necessary to rely on the presence of fixed conditioning equipment. A workshop building without fixed conditioning equipment is designed or modified not to be conditioned and would be classed under Part L of the building regulations as a low energy building (*in the absence of any other activity type in the building that would require conditioning*). One with fixed conditioning equipment is designed or modified to be conditioned and would be subject to the full requirements of Part L of the building regulations.

## Disclaimer

As stated at the beginning of this document, this is only an opinion on what could represent an appropriate interpretation of the Energy Performance of Buildings regulations and associated application of the methodology for assessing the energy efficiency of those buildings. It may or may not be a correct interpretation and it cannot be relied upon in any way.

Responsibility for determining how the regulations apply to any transaction rests with each party to the transaction and their respective legal advisors. Energy assessors may be able to give an opinion on whether current practice would indicate an EPC is required or not required, but any such opinion is just an opinion and is not legal advice.

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29 January 2018



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