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PART L CHANGES

From 6th April 2014 Part L 2013 superseded Part L 2010

What does this mean?

The changes to Part L of the Building Regulations have resulted in a requirement for a further 9% reduction (aggregate) in carbon dioxide emissions in order to achieve Part L compliance, and will therefore increase overall construction cost.

The 9% aggregate improvement applies to England only. Wales, Scotland & Northern Ireland will be issuing their own versions of Building Regulations.

In Wales the new target is a 20% improvement over 2010 which is coming into effect on 31st July 2014. In addition to this there will be TPEC (Target Primary Energy Consumption) measured in kWh/m². Also the 1000m² threshold for consequential improvements to energy performance has been removed for extensions (applies to buildings in Wales).

Which projects does this apply to?

Where a building notice, full plans submission or initial notice was given to a Local Authority or Building Control Body before 6th April 2014, the provision of Part L 2013 will not apply provided work commences on site before 6th of April 2015.

In summary, in order to ensure future developments can be built under Part L 2010, sites must have been registered with Building Control before 6th April 2014. In addition, it is essential that works on site will need to commence before 6th April 2015.

Key changes in Part L2A 2013 (new buildings other than dwellings):

Part L 2013 (and supporting docs) prescribes maximum values (not to be exceeded) for certain components of the building. The major changes are described below:

- **Specific Fan Power** - Ventilation system specific fan powers, have been significantly reduced from the 2010 recommendations. This will impact on plant sizing (i.e. AHU/fan selections), plant component selections (i.e. requirement for reduced coil and filter resistances), and is likely to result in a requirement to oversize fans and speed control them to achieve maximum efficiencies. More significantly, the reduction in SFP's will result in a requirement to increase duct cross sectional areas in order to reduce system resistances, therefore impacting on void depths and riser sizes, not to mention increased cost.
- **Lighting Efficiency** – the minimum efficiency of lighting has increased by 9% (from 55 luminaire lumens per circuit Watt to 60). This will require a greater utilisation of modern lamp sources such as LED lighting which are becoming more cost effective, however are still more expensive than more traditional types. The way that lighting efficiency is being calculated has also been altered. Previously lighting efficiency solely related to light fittings, but within the new Part L lighting efficiency includes all the light fittings within the room and the lighting controls installed as well. Therefore lighting controls cannot be an afterthought, to ensure compliance with the required lighting efficiency they need to be included with the initial design of a project and cannot be subsequently value engineered out.
- **Lighting Design** – The lux levels have to be entered for each room type for Part L 2013. To be clear, Part L 2010 was based on luminaire efficiency, lux level remained the same in the actual and notional building based on the NCM room activity. This is introduced to limit over lighting as actual installed lighting wattage is used.

As before to comply with Part L2A the building must be more efficient than a 'notional' building which is a building of the same size, shape and orientation as the actual building, constructed to a 'concurrent' specification (set standard). If the actual building is constructed entirely to this specification it should comply with this section of Part L. However, other than this specification the only change between the 'notional' and actual building is the glazing proportion, with the glazing being more evenly distributed in the 'notional' building. This will negatively impact the lighting consumption and therefore the carbon emissions of the actual building.

Compliance should in theory still be possible without the addition of renewable technology however it will need a combined effort by all members of the design team to assess and reduce energy and carbon emissions. Adding insulation and improving the U-values are not a cost effective way to approach compliance by themselves. Lighting and auxiliary energy represent a significant proportion of the

overall energy consumption. Daylight dimming, PIRs and use of demand control ventilation will help in achieving compliance, but all of this will result in increased cost to the M&E services.

Part L BRUKL and EPC outputs will be worse with 2013 as gas, electricity and other fuel carbon factors have increased.

KEY CHANGES TO THE NOTIONAL BUILDING ARE:

- **Air permeability** – The minimum value Part L compliance remains at 10m³/hr per m² at 50 Pa, however the notional building will consider 5m³/hr per m² at 50 Pa for buildings up to 250m², and a further reduction to 3m³/hr per m² at 50 Pa for all buildings over 250m². What this means is that whilst it may still be possible to achieve Part L compliance with the air permeability at the minimum figure (10m³/hr per m² at 50 Pa) the notional building will be using improved figures to compare against the actual building, and so significant improvement will be required elsewhere.
- **U values** – The table below makes a comparison between the minimum values for the building fabric described in the Part L document, and how the notional building looks at these for both 2013 and 2010. It is clear that the notional building is using improved figures to compare against the actual building, and so it is unlikely that a pass can be achieved using the minimum figures without significant improvement elsewhere or the introduction of renewable technologies. That said, the only real increase between the notional buildings for 2010 and 2013 are the U-values for windows, and the G-Value and light transmittance for roof lights.

Thermal Element U-Value	Minimum Value for Part L (2013)	Notional Building Target (2013)	Notional Building Target (2010)
Wall	0.35w/m ² k	0.26w/m ² k	0.26w/m ² k
Floor	0.25w/m ² k	0.22w/m ² k	0.22w/m ² k
Roof	0.25w/m ² k	0.18w/m ² k	0.18w/m ² k
Window	2.2w/m ² k	1.6w/m ² k	1.8w/m ² k
Window (G-Value)	n/a	40%	40%
Window Light Transmittance	n/a	71%	71%
Rooflight	2.2w/m ² k	1.8w/m ² k	1.8w/m ² k
Rooflight (G-Value)	n/a	55%	43%
Rooflight Light Transmittance	n/a	60%	67%

Summary:

It is difficult to pinpoint exactly what effect the new building regulations will have until there have been a few projects carried out to provide some form of benchmark, except to say that there is an obvious increase to cost in order to achieve compliance.

It is clear that the requirements for improved specific fan powers and lighting efficacies will have a major impact on the M&E services in terms of both cost and integration within the building itself. It should be said that ductwork design will now become even more integral to the design of the building itself to ensure that there is sufficient space within the structure to accommodate the larger sizes required.

In terms of the construction elements, whilst there is no major improvement to the minimum U-values, the notional building is using figures that are better than the minimum to compare against the actual building and as such this should be factored in; it is unlikely that a building will achieve a pass just using the minimum figures set out in Part L. This is the same for air permeability testing as it is for M&E plant efficiencies.