

Explaining the EPC - The Performance Related Features Table

The Performance Related Features table found on page 2 of the EPC gives an indication of the energy efficiency of the various components of the dwelling. Assessors and home owners often ask about this table and this article answers some of the most common questions we receive;

Question: *The dwelling has four wall types, why is there only one listed?*

Answer: Unlike the EPC for existing dwellings that displays up to three different wall types, EPCs for new-builds display only one line for walls. The U-value displayed is an area weighted average U-value across all walls (excluding party walls) in the dwelling.

Question: *How are the energy efficiency ratings calculated?*

Answer: There are several different methods for calculating energy efficiency ratings for the features:

Walls/roofs/floors and windows: the number of stars is based upon the average U-value. The lower the U-value the more stars awarded;

For **walls** achieving an u-value $<0.3 \text{ w/m}^2\text{k}$ would be awarded five stars. The limiting u-value in L1A is $0.3 \text{ w/m}^2\text{k}$ so all new dwellings should achieve this.

Summary of this home's energy performance related features

Element	Description	Energy Efficiency
Walls	Average thermal transmittance $0.27 \text{ w/m}^2\text{k}$	★★★★★
Roof	Average thermal transmittance $0.12 \text{ w/m}^2\text{k}$	★★★★★
Floor	Average thermal transmittance $0.18 \text{ w/m}^2\text{k}$	★★★★★
Windows	High performance glazing	★★★★★
Main heating	Boiler and radiators, oil	★★★★☆
Main heating controls	Time and temperature zone control	★★★★★
Secondary heating	Room heaters, wood logs	—
Hot water	From main system	★★★★☆
Lighting	Low energy lighting in all fixed outlets	★★★★★
Air tightness	Air permeability $2.5 \text{ m}^3/\text{h.m}^2$ (as tested)	★★★★★

For **roofs** achieving an u-value $<0.15 \text{ w/m}^2\text{k}$ would be awarded five stars. A u-value between $0.15\text{-}0.3 \text{ w/m}^2\text{k}$ would achieve four stars.

For **floors** achieving an u-value $<0.2 \text{ w/m}^2\text{k}$ would be awarded five stars. A u-value between $0.21\text{-}0.3 \text{ w/m}^2\text{k}$ would achieve four stars.

For **windows** achieving an u-value $<1.7 \text{ w/m}^2\text{k}$ would be awarded five stars. However oddly the average u-value of windows is not displayed.

Main heating and Hot water: the stars are assigned using the unit cost of the fuel (from SAP table 12), the efficiency and the responsiveness* of the system. For hot water a star is 'lost' if there is no cylinder stat. Finally a star is added if there is solar water heating.

*The responsiveness of a heating system is a measure of how quickly the system responds to demand. For example an electric panel heater has a responsiveness of 100%, it can be easily turned up or down on demand. An open fire has a lower responsiveness (50%) as the heat cannot be easily controlled.



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Main heating controls: the stars are assigned based on the effectiveness of the controls. For example a programmer, room stat and TRVs would achieve four stars, time and temperature zone control would achieve five stars.



Lighting: the stars are assigned based upon the percentage of low energy lights. To get five stars there needs to be at least 70% LEL. As the current regulations require at least 75% LELs then all new build dwellings should achieve five stars here.



Air tightness: the stars are assigned based on the measured air permeability of the dwelling. To achieve 5 stars a score of $< 3 \text{ m}^3/\text{m}^2/\text{hr}$ is required. For four stars a score between 3 and $7 \text{ m}^3/\text{m}^2/\text{hr}$ is needed. Finally three stars would be awarded for a score between $7 - 13 \text{ m}^3/\text{m}^2/\text{hr}$. If no testing is carried out a hyphen is shown.



Question: Why are star ratings never assigned to secondary heating?

Answer: As there is no recommendation to improve the secondary heating, there are no stars assigned. Also as secondary heating provides a relatively small proportion of heat to a dwelling a rating is not deemed appropriate.



Question: Sometimes there are no stars shown why is this?

Answer: Unlike existing dwelling EPCs that will display 1-5 stars, the minimum number of stars displayed on a new-build EPC is 3. If the stars calculated for an element are ≤ 2 then the OCEPC displays a hyphen '-' instead of a star rating.

Question: An electric boiler is 100% efficient how does it get fewer stars than a 65% efficient gas boiler?

Answer: In SAP 2012 the unit cost of standard electricity is 13.19p/kWh compared to just 3.48p/kWh for mains gas, a difference of 73% which outweighs the 35% difference in efficiency between the systems.



Support Contacts

Should you have any queries or need assistance, please call our On Construction Technical Support Team on **01455 883 236** or e-mail us at: Onconstruction-support@elmhurstenergy.co.uk

(Opening hours: Monday – Thursday, 8am - 6pm, Friday 8am – 5pm)

