

Understanding rooflight U-values



Welcome to this 'Quickguide': part 3 of a series published by NARM, to provide busy roofing contractors and installers with quick access to the information they need to maintain professional and compliant working practices.

Requirements of The Building Regulations

For all non-domestic applications, the worst acceptable standard for the thermal performance (U-value) of rooflights in new build work is stated as 2.2 W/m²k. For refurbishment or domestic applications, this figure is reduced to 1.8 W/m²k.

U-values for flat or 'in-plane' rooflights

As the U-value is calculated by dividing the heat loss through the rooflight by its area, this is straightforward for flat, 'in-plane' type rooflights. Therefore, manufacturers' quoted figures can generally be used to form the basis of building calculations without further consideration.

U-values for 'out-of plane' rooflights

Many rooflights are out-of-plane designs that sit proud of the plane of the roof (typically mounted on upstands or kerbs). The range includes modular dome or pyramid rooflights, continuous barrel vaults, and glazing bar systems. Furthermore, rooflights may be mounted onto upstands designed and supplied by others, which can effectively be considered as part of the roof, or some rooflights (particularly individual dome and pyramid modular rooflights) can be supplied as an assembly with a pre-manufactured kerb matched to the rooflight itself.

Building Regulations state that the worst acceptable U-values for rooflights are based on the developed area of the rooflight (not the area of the roof aperture, which is the true U-value). This is termed the U_d-value, and can be calculated for either a rooflight alone, or for a rooflight-and-kerb assembly.

U_d-values: the correct values for checking against limiting values in The Building Regulations

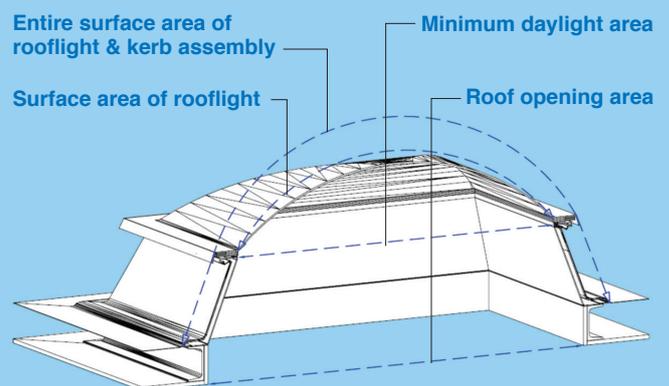
The U_d-value is calculated from the developed area of the

rooflight. Where a rooflight-and-kerb assembly is being supplied, the rooflight supplier should be able to quote this value both for the rooflight only, AND for the entire assembly. To ensure Building Regulations compliance, both of these values must achieve the worst acceptable standard of 2.2 W/m²k.

It is not acceptable to use an assembly of a rooflight with poorer thermal performance (such as double skin rooflights) on a kerb simply because the U_d-value for the rooflight-and-kerb assembly is better than the limiting values in the Building Regulations, unless the U_d-value for the rooflight alone also meets the limiting values.

Full details are provided in NARM Technical Document NTD 2 'Assessment of thermal performance of out-of-plane rooflights' which can be downloaded from the NARM website.

Typical 'out-of plane' rooflight



Minimum acceptable thermal performance standards to ensure Building Regulations compliance:

Rooflight only:	2.2 W/m ² k
Rooflight & kerb assembly:	2.2 W/m ² k

Further information

Further information can be obtained from NARM, (National Association of Rooflight Manufacturers) at www.narm.org.uk