Waterproofing interfaces at rooflights and roof windows on flat roofs

Rooflights and roof windows are important features of many flat roofs, providing natural daylight, ventilation, smoke control or access. However, the junction between the roof waterproofing and the rooflight or roof-window assembly is also a common area of weakness.



Difficulties can occur where the waterproofing is dressed over the top of a builder's upstand before the rooflight is installed. At corners the laps, reinforcement, patches and additional membrane layers can combine to produce an uneven surface. If the rooflight frame or glazing assembly is then secured over this build-up, it may not sit evenly on the upstand. This can affect the alignment of the unit, the compression of seals, the effectiveness of fixings and the drainage of water from the rooflight.

The risk is particularly significant for flat-glass rooflights and other units where the top of the upstand forms a bearing, attachment or sealing surface. Some rooflights require the roof covering to extend over the side and top of the upstand, while others use proprietary kerbs, clamping flanges or removable weathering profiles that allow the waterproofing to terminate on the vertical face.

This guidance explains the principles that should be considered when designing and installing waterproofing around rooflights and roof windows on flat roofs. It does not prescribe a single universal detail and does not replace the project specification or the installation instructions issued by the rooflight and waterproofing-system manufacturers.

This guidance applies to fixed and opening rooflights, including:

- flat glass rooflights and roof lanterns;
- domes, pyramids and barrel-vault rooflights;
- smoke vents, access hatches and opening units;
- walk-on rooflights and structural glazing;
- continuous or modular rooflight systems; and
- roof windows fitted into proprietary flat-roof kerbs or adapters.

It applies to proprietary kerbs and builder's upstands used with common flat-roof waterproofing systems, including bituminous, single-ply, liquid-applied, mastic asphalt and hot-melt systems.

Key design principles

Before work starts, the rooflight and waterproofing details should be checked, as is essential that the completed detail should:

- maintain continuous waterproofing around the full perimeter;
- provide the required upstand height above the finished roof surface;
- leave the rooflight bearing, attachment and sealing surfaces flat and unobstructed;
- maintain the finished dimensions required by the rooflight manufacturer;
- avoid blocking drainage channels, weep holes, hinges, actuators or fixings;
- maintain insulation and air-seal continuity, avoiding thermal bridges at the upstand and rooflight frame; and
- allow for inspection, maintenance and future replacement.

The upstand should be structurally sound, square, correctly sized and formed to the pitch required by the rooflight manufacturer. Dimensions should be checked after insulation boards, waterproofing and any capping have been installed—not only at the structural opening.



Rooflight Types

Roof windows used on flat roofs

A roof window intended for a pitched roof should only be used with the manufacturer's flat-roof kerb, adapter or flashing system. The flat-roof membrane should connect to that proprietary component rather than being improvised around the window frame.

Walk-on and structural rooflights

Waterproofing or capping must not interfere with structural support, load transfer or edge restraint. Any material placed beneath the unit should form part of the designed and accepted assembly.

Continuous or modular rooflights

These systems need project-specific details for perimeter gutters, end closures, movement joints, module connections and condensation drainage. A generic upstand detail may not be sufficient.

Builder's upstands

Flat-glass rooflights, lanterns and bespoke glazing are often fitted to builder's upstands. The finished width, height, pitch and dimensions should be obtained from the rooflight manufacturer. The thickness of the waterproofing and any capping must be allowed for.

Waterproofing membrane considerations

Waterproofing type	Principal consideration
Reinforced bitumen membrane (RBM)	Multiple underlay, capsheet and corner layers can create substantial thickness. Layer sequencing must be agreed with the system manufacturer.
Single-ply membrane	Membrane-laminated metal and carefully positioned welds can reduce local build-up; T-joints and patches must remain properly sealed. Folded corners can become bulky; proprietary corner pieces or manufacturer-approved formed details may be necessary. Membrane-laminated metal must not bridge the rooflight frame's thermal break.
Liquid-Applied Membranes	Although liquid-applied membranes do not have sheet laps, reinforcement and additional coats may form small ridges. Transitions should be smooth without reducing the specified coverage.
Mastic asphalt	Its finished thickness makes direct installation beneath some precision rooflight frames unsuitable unless specifically designed
Hot-melt and inverted roofs	The exposed rooflight upstand detail may use a different compatible membrane or capping arrangement and must remain above all finishes and retained-water levels.

The following arrangements may be suitable, depending on the rooflight and waterproofing systems:

Arrangement	Where it may be used	Key requirement
Membrane over the top of the upstand	Where required or accepted by both manufacturers.	Control laps and corner reinforcement so the finished top remains flat.
Membrane to a proprietary kerb or flange	Where the unit includes a membrane clamp, weather flange or defined termination zone.	Follow the product detail and keep drainage and fixing features clear ensuring minimum 150 mm waterproof upstand.
Membrane terminated on the vertical face with a cover flashing	Where the rooflight manufacturer permits the top of the upstand to remain clear.	Secure the membrane minimum 150 mm above finished roof level and protect it with a properly designed, compatible flashing or capping.

Membrane carried over the upstand

Where the waterproofing passes over the top of the upstand, the detail should use the membrane manufacturer's approved corner treatment. Where possible, the membrane should be cut and installed in one continuous length to avoid lap build-up beneath the frame. Where laps are necessary, they should be staggered to minimise localised build-up.

Required layers must not be cut away or omitted simply to make the surface flatter. Where minor levelling adjustments are required, a waterproof compressible tape may be suitable. The tape must be pre-drilled at fixing locations to prevent it wrapping around the fasteners during installation. Avoid positioning fasteners through membrane laps on top of the kerb. Fix the rooflight consistently through areas of single-layer membrane to provide even support and prevent distortion or uneven seating of the frame. Any change from the standard system detail should be agreed with the waterproofing manufacturer.

Proprietary kerbs and flanges

Many domes, smoke vents, hatches and rooflights are supplied with a proprietary kerb. The membrane may finish beneath a clamp, removable weather flange or cover profile. These features should be used exactly as intended and should not be covered or obstructed by additional membrane.

Separate cover flashing or capping

Where permitted, the membrane may finish on the vertical face and be protected by a separate cover flashing or capping. This can keep the rooflight bearing surface clear of membrane laps. The flashing may be formed from lead, aluminium, stainless steel, coated metal, membrane-laminated metal, or another compatible products. Metal must not bridge the insulation or the rooflight frame's thermal break. It should:

- provide a secure and weatherproof cover to the membrane termination;
- shed water clear of the membrane edge;
- have properly formed corners and joints;
- allow for thermal movement;
- avoid puncturing the waterproofing in vulnerable locations; and
- not interfere with the rooflight frame, seals, drainage or fixings.

Note:

If the rooflight sits directly on a metal capping, that capping becomes part of the bearing and sealing surface. It must be flat, rigid, supported and accepted by the rooflight manufacturer.

Controlling build-up at corners

Corners should be considered at the design stage, not resolved after the membrane has been installed. A straight sectional detail may look acceptable but may not show the combined thickness where the membranes meet at a corner.

To reduce the risk of excessive build-up:

- use proprietary or factory-formed corners where available;
- stagger laps and avoid several lap ends meeting at one point;
- keep reinforcement outside the rooflight bearing zone where the system allows;
- avoid creases, bulky folds and raised fasteners;
- check the finished top with a straightedge or template; and
- inspect and photograph the completed upstand before the rooflight is installed.
- The rooflight should not be forced down onto an uneven surface by overtightening the fasteners. This can distort the frame and give a false impression that the unit has been properly seated.

Key messages

- Do not use one standard detail for every type of rooflight.
- Confirm whether the waterproofing should pass over the upstand or terminate beneath a flange or flashing.
- Keep rooflight bearing, attachment and sealing surfaces flat and clear of excessive membrane build-up.
- Do not cut away required membrane layers or force a rooflight onto an uneven surface.
- Use only compatible and properly designed lead, metal or proprietary cover flashings.
- Resolve conflicting manufacturer details before work starts.
- Inspect and record the completed waterproofing before the rooflight is installed.

Further information:

Relevant sources include the current installation instructions issued by the rooflight and waterproofing manufacturers, BS 6229: 2025–*Flat roofs with continuously supported flexible waterproof coverings. Code of practice,* Rooflight Association guidance, and recognised lead-sheet guidance where lead is used.

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