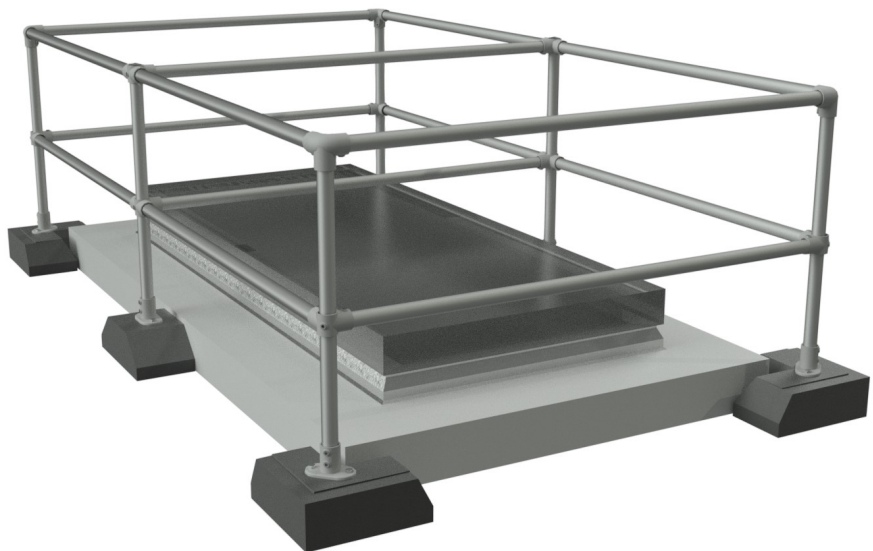
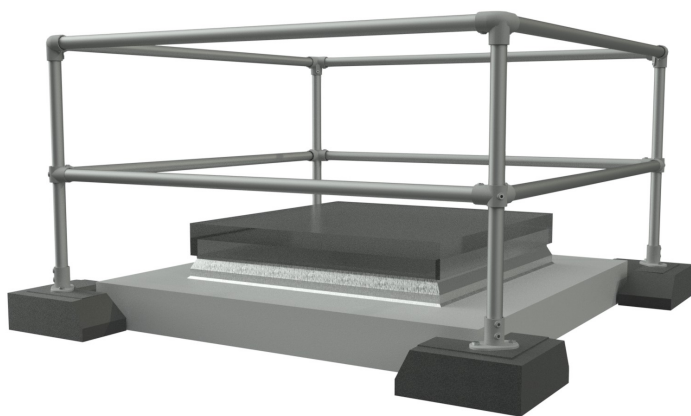




# Freestanding Rooflight & Hatch Protection System

Operation & Maintenance Manual



# Specification



## Freestanding Rooflight & Hatch Protection - System Specification

### General Description

Our rooflight and access hatch protection system is a freestanding guardrail system that does not require any mechanical fixing into the roof surface. This system has been designed and manufactured to fully comply with current regulations.

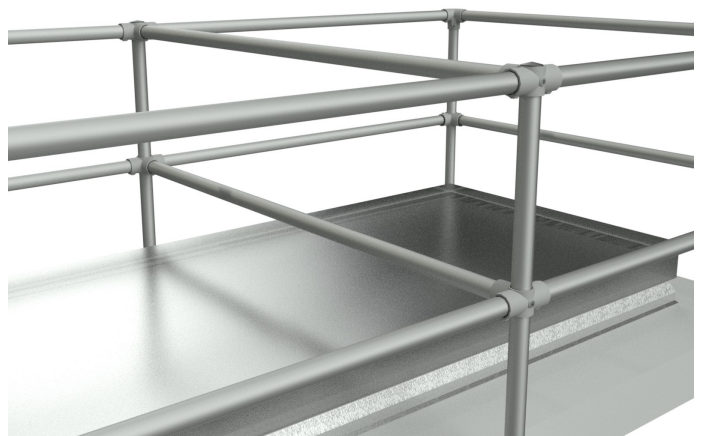
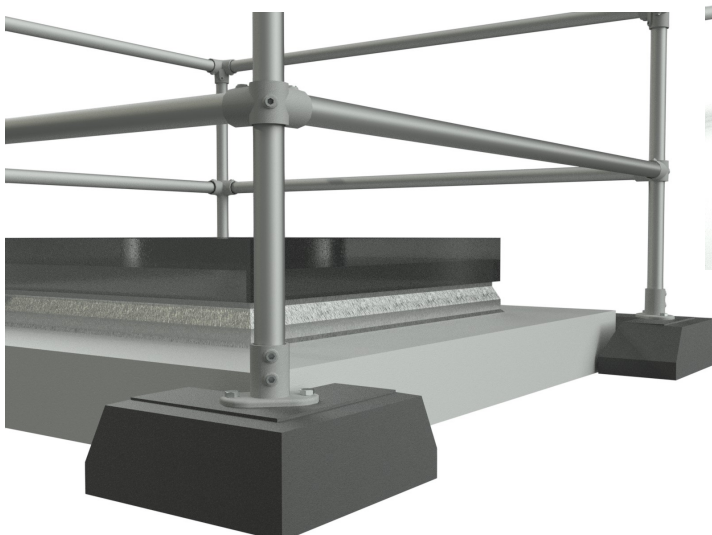
### Material

The system is assembled using 48mm OD x 1.5mm magnatube coated steel tube, and galvanised malleable cast iron fittings. The freestanding feet are manufactured from 100% recycled PVC compound with the fixing bolts and screws manufactured from zinc-coated steel.

### Safety Standards

Our freestanding system is designed in line with the following safety standards:

- BS 13700:2021 - Permanent counterweighted guardrail systems.
- BS EN 13374:2013 - Class A - Temporary edge protection systems.
- BS EN ISO 14122-3:2016 - Stairs, stepladders and guard-rails.
- HSG-33 - Health and safety in roof work.
- HSE INDG284 - Working on roofs.



# Components



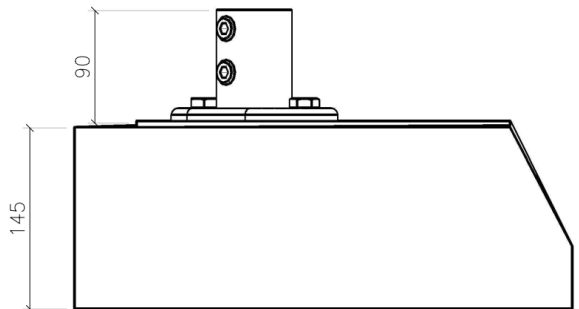
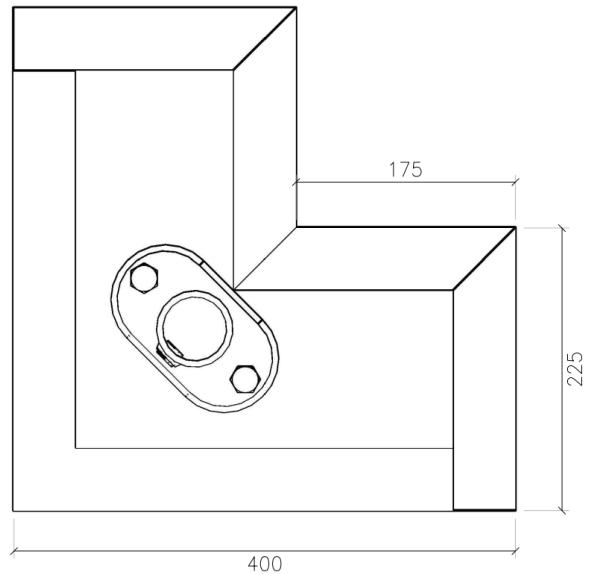
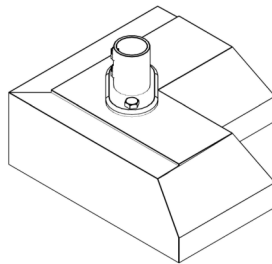
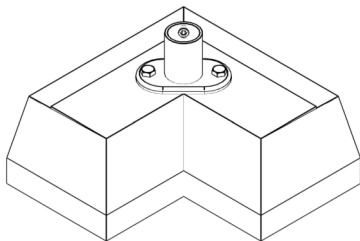
## Freestanding Rooflight & Hatch Protection - System Components

### RLCF - Corner Foot

The corner foot sits on the roof covering, positioned at each corner of the rooflight. A railing base flange is mechanically attached to the weight using M12 Hex Set Bolts, Washers & Nuts, providing a solid base for the upright stanchion. Weighing 20 kg it provides a stable base for the system.

#### Materials

The weight is manufactured from a recycled PVC compound and the railing base flange is galvanised malleable cast iron. The bolts that attach the two are zinc coated steel.

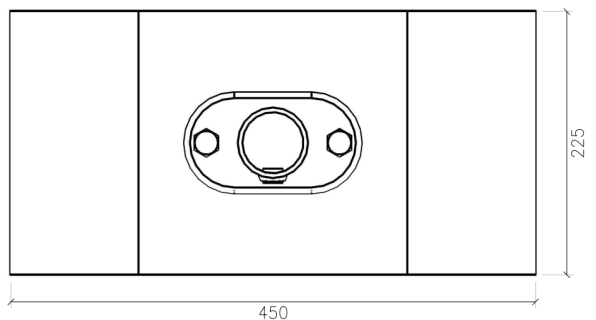
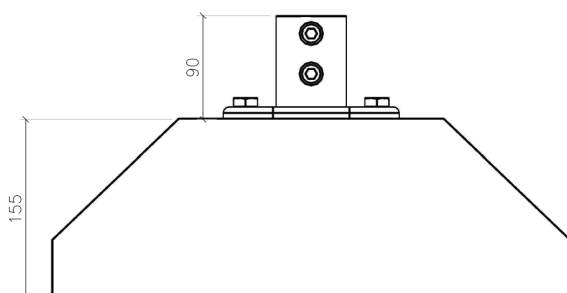
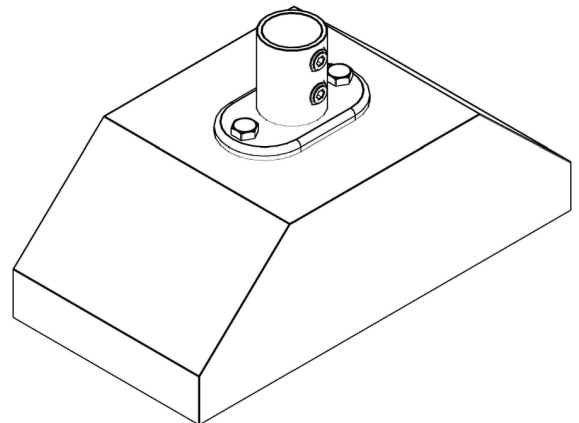


### RLIF - Intermediate Foot

The intermediate foot sits on the roof covering, positioned adjacent to the edge of the rooflight. A railing base flange is mechanically attached using M12 Hex Head Coach Screws, providing a solid base for upright stanchion. Weighing 16 kg, this bolsters the system stability.

#### Materials

The weight is manufactured from a recycled PVC compound and the railing base flange is galvanised malleable cast iron. The bolts that attach the two are zinc coated steel.



# Components



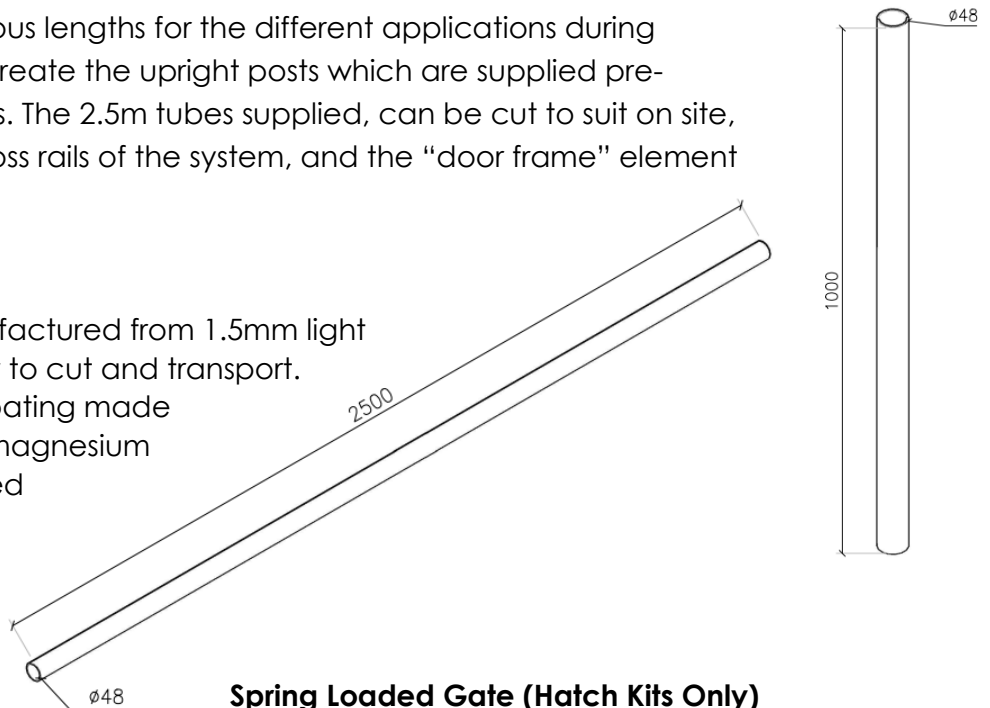
## Freestanding Rooflight & Hatch Protection - System Components

### 2.5m & 1.0m Cross Rail

The tube is supplied in various lengths for the different applications during installation. The 1m tubes create the upright posts which are supplied pre-assembled with cast fittings. The 2.5m tubes supplied, can be cut to suit on site, to create the horizontal cross rails of the system, and the "door frame" element of the hatch kits.

#### Materials

The lightweight rail is manufactured from 1.5mm light gauge steel making it easy to cut and transport. It comes with a resistant coating made from zinc, aluminium and magnesium and can be powder coated to any RAL colour.

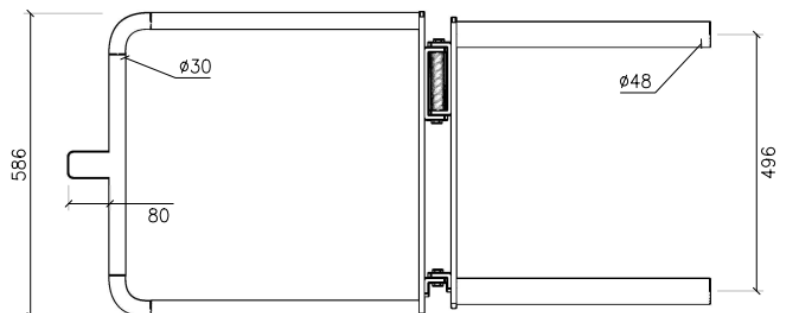
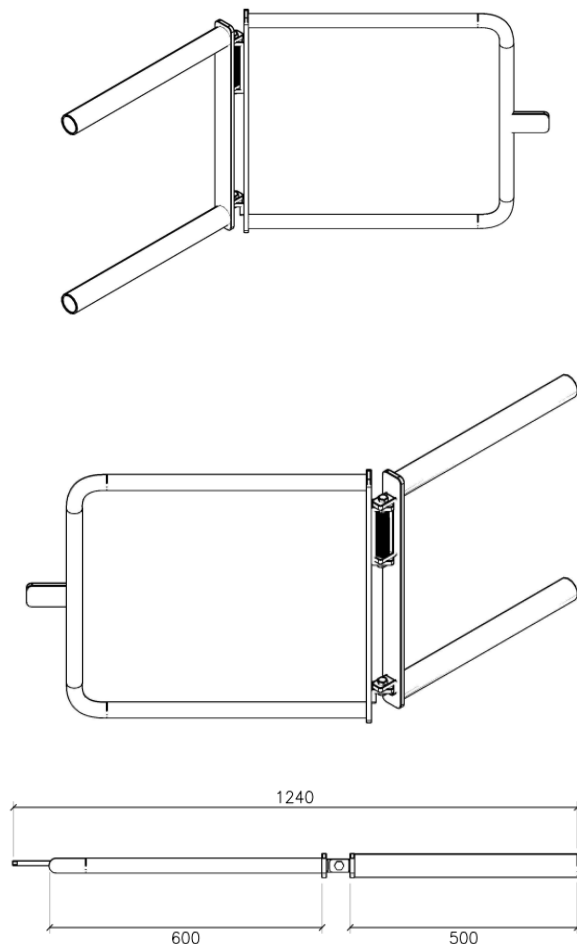


### Spring Loaded Gate (Hatch Kits Only)

The half height spring loaded gate is supplied with the hatch kits only to provide a safe working environment for the user leaving and entering the roof hatch. The gate is a fully welded one piece construction and includes a spring at the hinges so that it self closes.

#### Materials

Manufactured from 2mm mild steel tubing and plate steel which has a hot dipped galvanised coating. The spring is stainless steel. It is also available powder coated to any RAL colour.

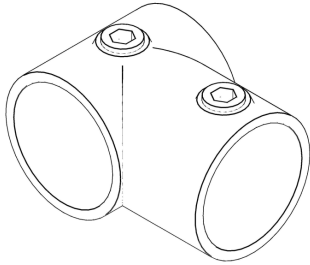


# Components



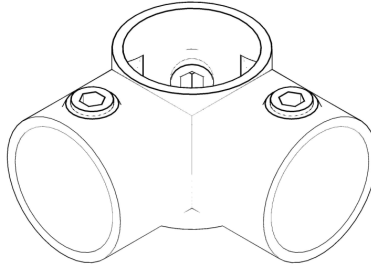
## Freestanding Rooflight & Hatch Protection - System Components

### 101 - Short Tee



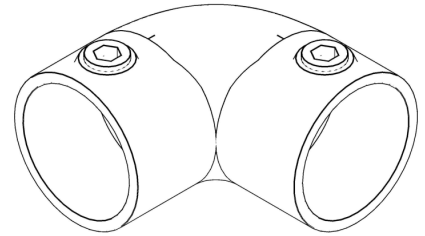
The Short Tee is a 90° butt joint, used to join middle rails to end uprights.

### 116 - Mid Rail Corner



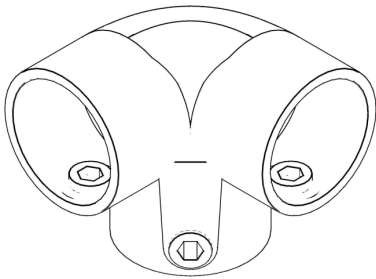
90° corner joint, used on the middle rail and paired with the top rail corner.

### 125 - 90 Deg Elbow



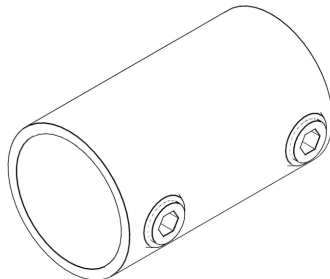
90° angle joint, used where the top rail meets the end upright.

### 128 - Top Rail Corner



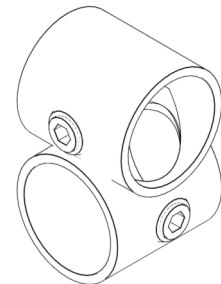
90° corner joint, used where the top rail meets the corner and paired with the 116.

### 149 - Sleeve Joint



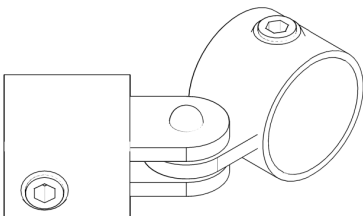
A straight fitting for joining tubes together and the gate.

### 161 - Offset Crossover



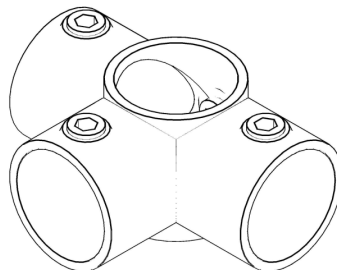
Designed to form a 90° crossover joint between two tubes and the gate.

### 173 - Single Swivel



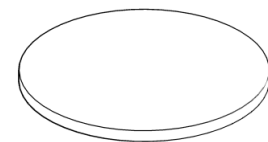
An adjustable fitting with a socket on one side and through connector on the other.

### 176 - Side Outlet Tee



Designed to tie uprights with horizontal tubes in three directions.

### Plastic End Cap



Used to cap the end of the tube on the side outlet tee.

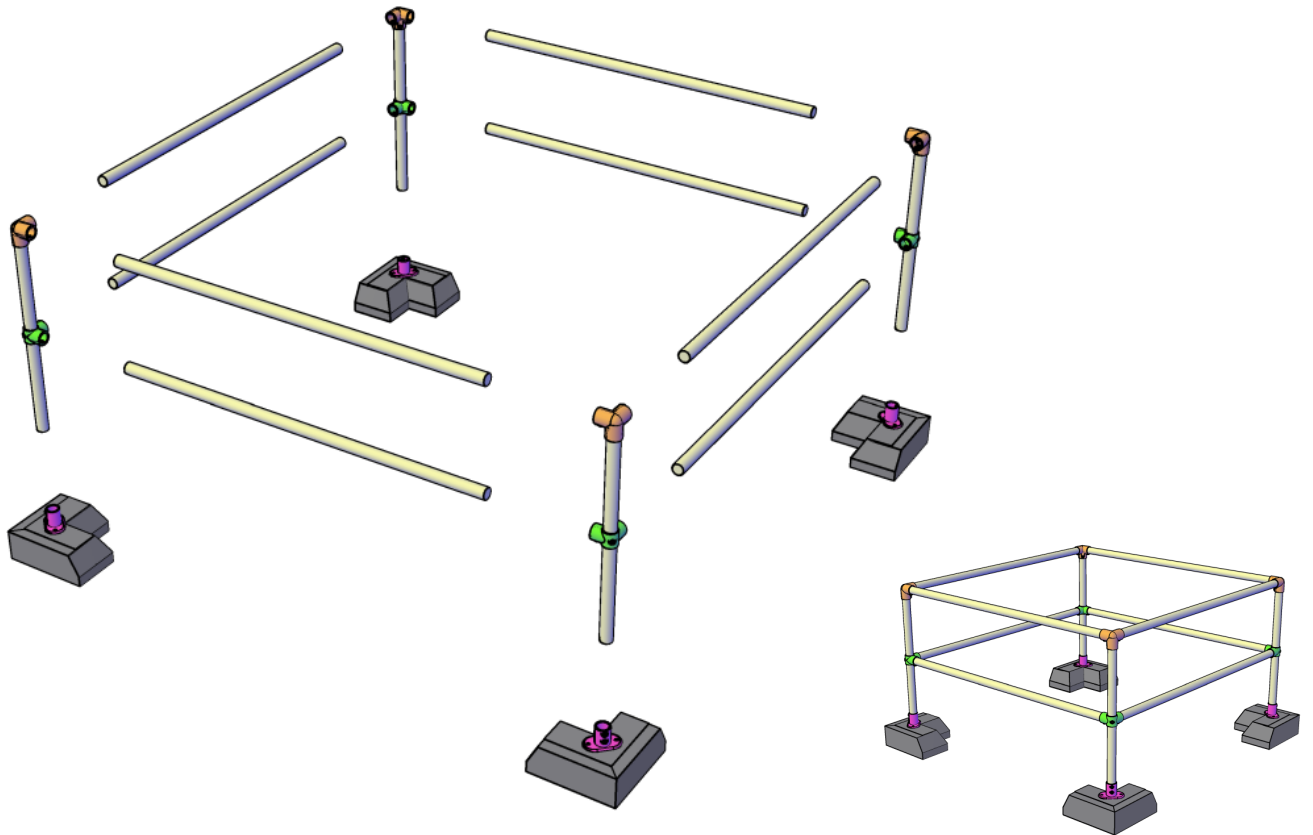
Materials - All the above fittings are manufactured from malleable cast iron and are galvanised coated equivalent to BS EN ISO 1461. These are also available powder coated to any RAL colour.

# Configuration

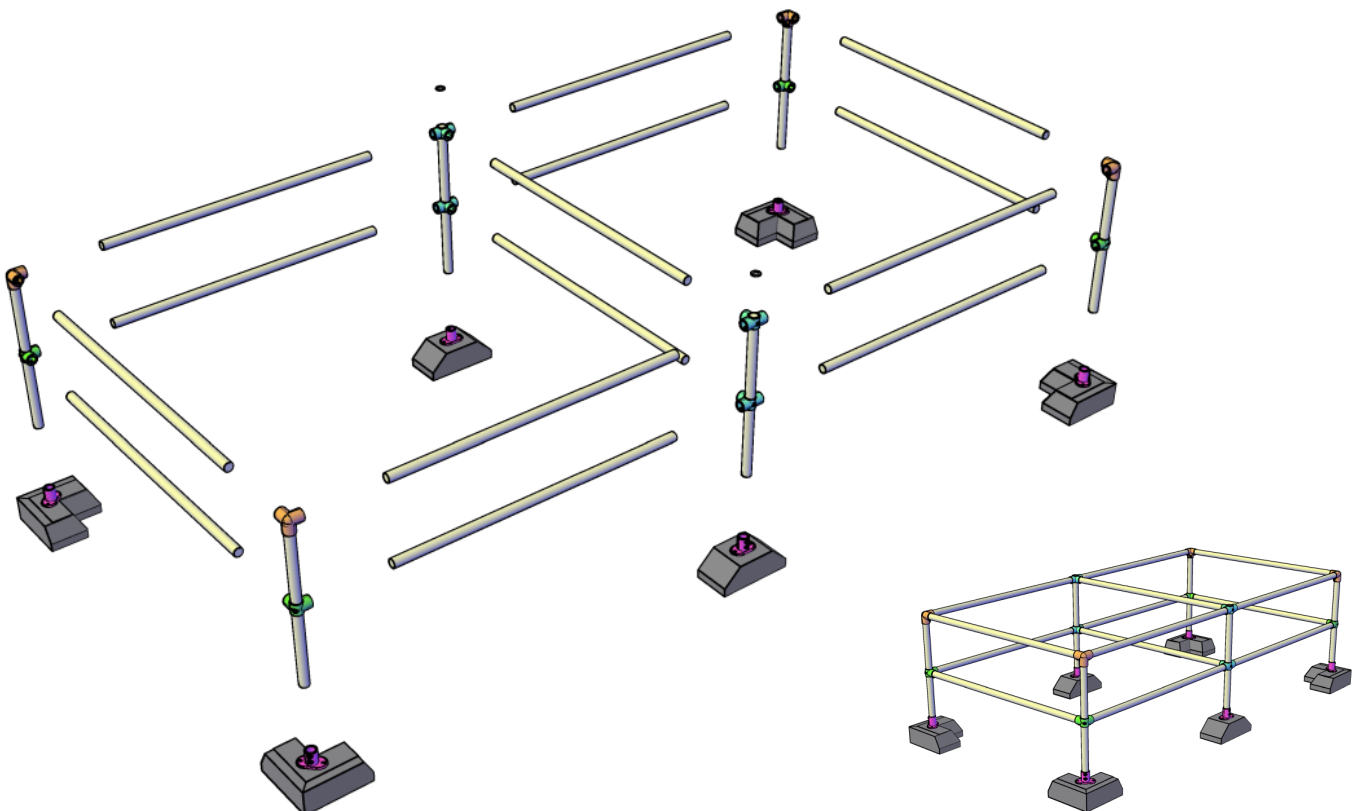
## Freestanding Rooflight & Hatch Protection - System Configuration



### Typical Layout of Single Rooflight Kit



### Typical Layout of Double Rooflight Kit



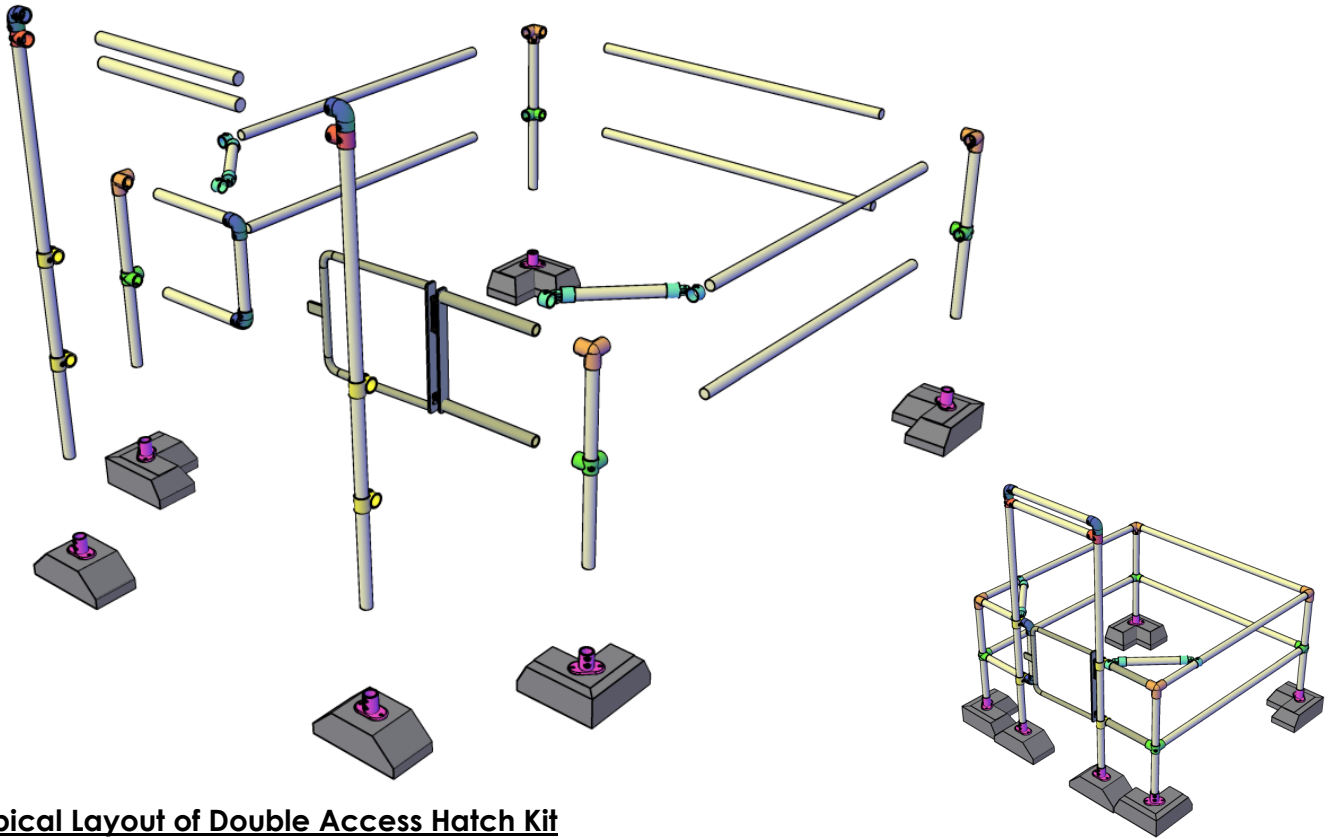


# Configuration

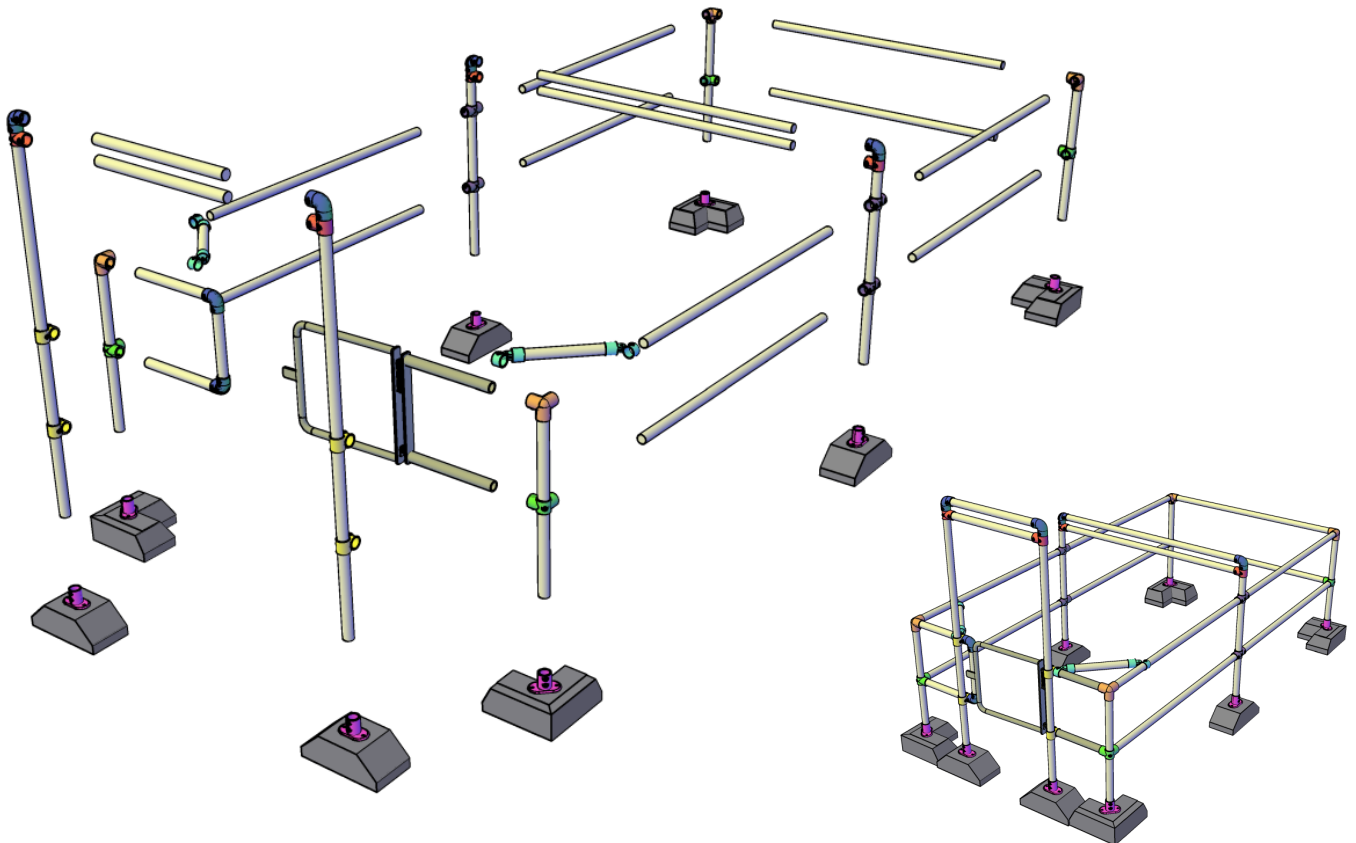


## Freestanding Rooflight & Hatch Protection - System Configuration

### Typical Layout of Single Access Hatch Kit



### Typical Layout of Double Access Hatch Kit



# Testing

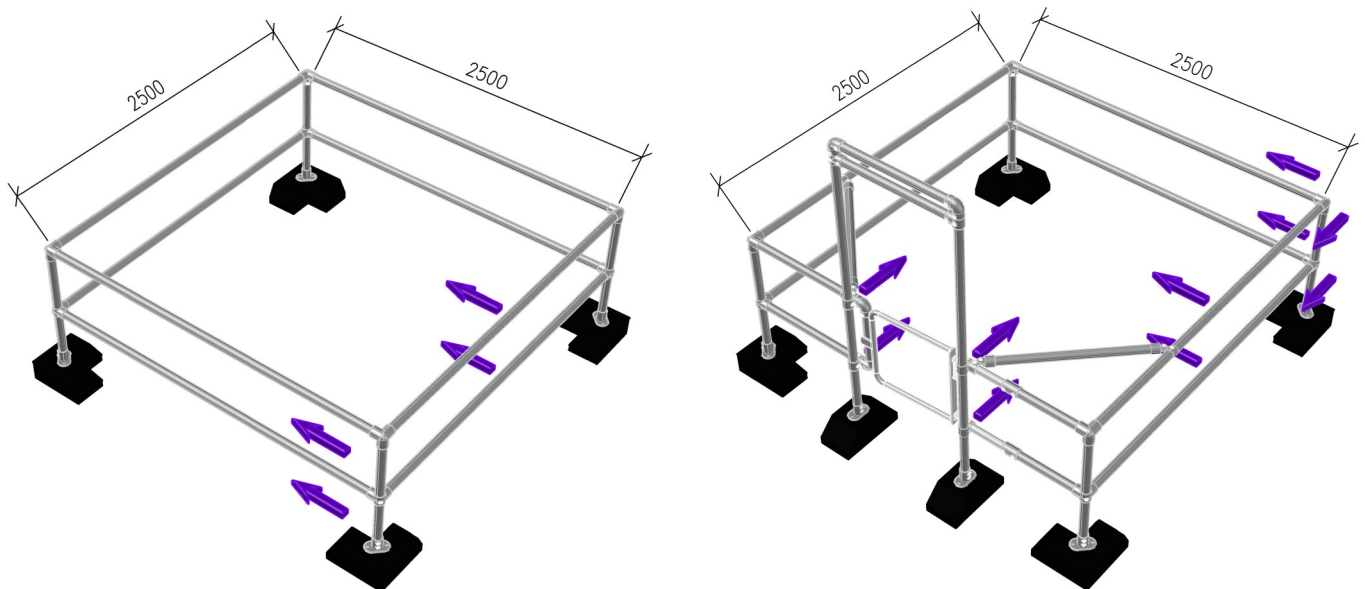


## Freestanding Rooflight & Hatch Protection - System Testing

Due to the nature of the rooflight protection systems, and lack of a British standard which covers these specifically, we have tested these systems in house, applying the same principals as included in BS13374:2013 (Temporary edge protection systems — Product specification — Test methods) and BS13700:2021 (Permanent counterweighted guardrail systems —Specification).

All dimensional clauses within both standards are the same, and the systems have been designed in accordance with these.

Testing and loading clauses within the 2 standards are also very similar. The 2 diagrams below show the point loading positions which we believe are equivalent to those given in the 2 standards. These are located at each upright position, and at the centre point between uprights, on both top and intermediate guardrails.



The tests were carried out on a sample at its max dimensions of 2.5m between uprights.

As per BS13700:2021, a pre-load of 0.3 kN was applied at each location for 1 minute, then removed. A datum point was then measured.

The test load, also 0.3 kN was then applied to each location and deflection measured from the datum. In no loading case, did the deflection measure greater than 55mm as required by BS13700:2021.

An ultimate limit load, of 0.495 kN was then applied to each location for 1 minute. During this period of maximum load, there was no identifiable yielding, fracture, or separation of any part of the assembly as required by BS13700:2021. All tests were carried out on a dry surface, and subsequently repeated, with the same results on a wet surface.

We Have therefore concluded, that the rooflight and hatch protection kits, meet all possible clauses in BS13700 that can be applied to these systems.



# Maintenance



## Freestanding Rooflight & Hatch Protection - System Maintenance

The system is maintenance free, however if cleaning is required, use only a mild detergent and water (such as a domestic washing up liquid) in order not to damage any of the galvanised coating.



# Certification

## Freestanding Rooflight & Hatch Protection - System Certification

- It is our recommendation, along with it being a BS13700 requirement, that the guardrail installation should be inspected annually by a competent person.
- A visual inspection of the complete installation in accordance with the current needs of the client should be undertaken. As well as checking if any new equipment has been installed on the roof that may require further guardrail protection.
- Check against the original installation drawing to see if any part of the installation has been modified.
- Check all screws and fixings are in place and sufficiently tightened.
- Check the height of the top rails and that they are level.



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