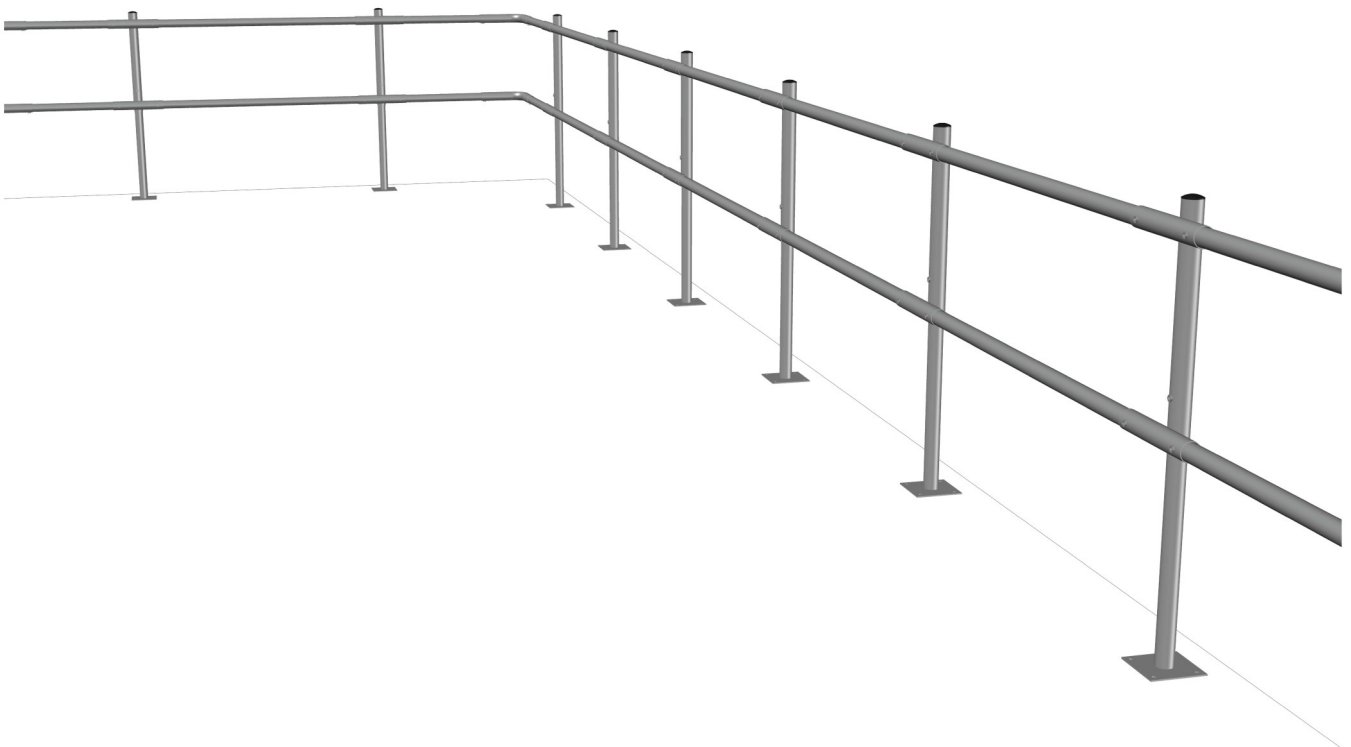




# **Top Fixed Guardrail System**

## **Operation & Maintenance Manual**



# Specification



## Top Fixed Edge Protection - System Specification

### General Description

Our top fixed edge protection system is a guardrail system designed for fixing to parapets, steel work and other substrates where freestanding would not be appropriate. The system has been designed, and is manufactured to fully comply with current HSE regulations.

### Material

The top fixed uprights are fabricated with a 4mm base plate, 150mm x 150mm. A 48mm OD x 3mm upright tube is fully welded to the base plate at 90 degrees. The upper and lower cross rails are manufactured from 48mm OD x 1.5mm magnatube coated steel tube. All fixing screws are manufactured from zinc-coated steel.

### Safety Standards

Our top fixed guardrail is designed in accordance with and/or tested to the following safety standards:

HSG-33 Health and safety in roof work.

HSE INDG 284 "Working on roofs".

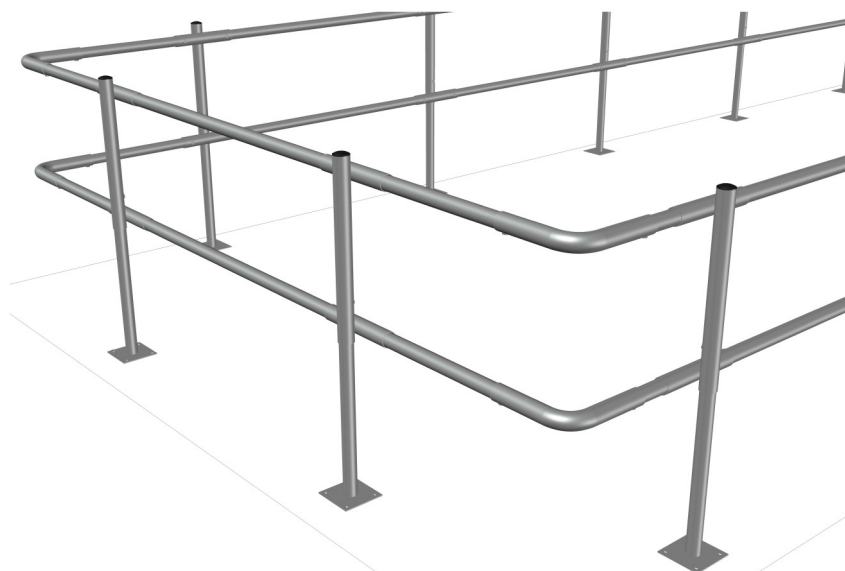
BS EN 13374:2013+A1:2018

BS EN ISO 14122-3:2016.

BS 6399: Part 2 1995 Wind Code.

### Loading Calculations

Loading calculations can be provided to verify loading requirements of British Standards. Testing can be carried out at an additional cost and would be project specific.



# Components



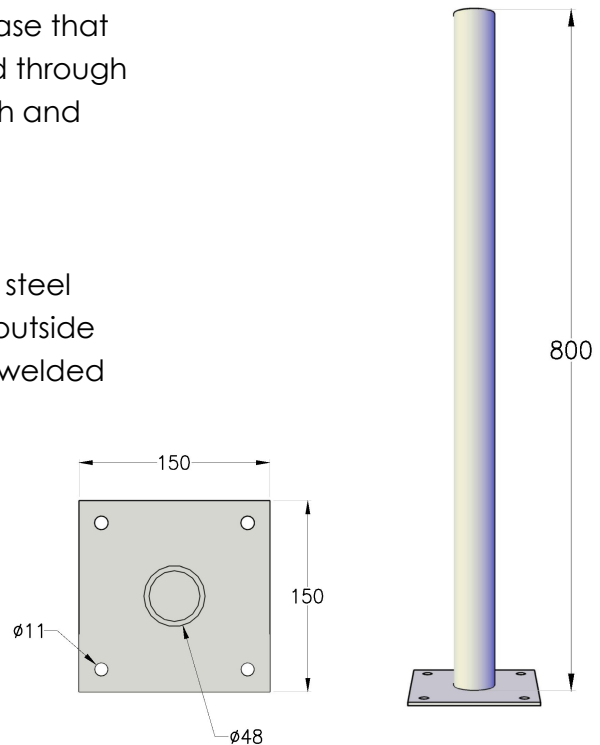
## Top Fixed Edge Protection - System Components

### TSUP - Top Support Upright

The Top Support Upright is a welded post and base that sits on a substrate and is mechanically attached through the base with M10 fixings. The post is 800mm high and welded at 90 degrees.

#### Materials

The base of the upright is made using 4mm mild steel plate which is 150mm x 150mm in size. A 48mm outside diameter tube with a 2mm wall thickness is fully welded to the base in the centre. It has a hot dipped galvanised coating and is available powder coated to any RAL colour.

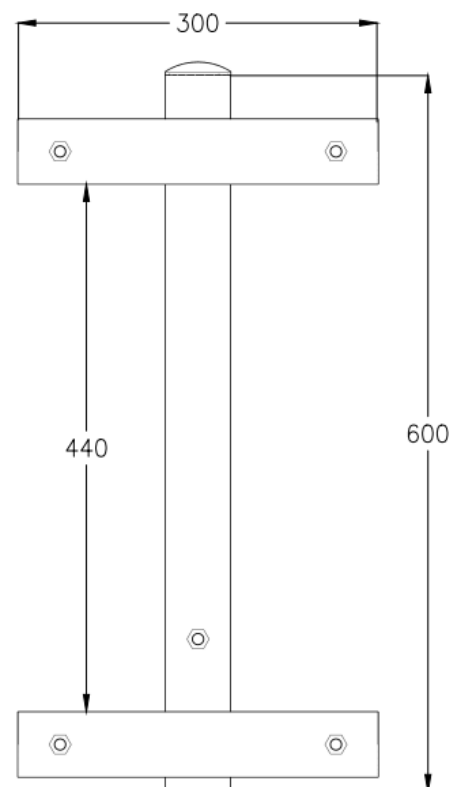
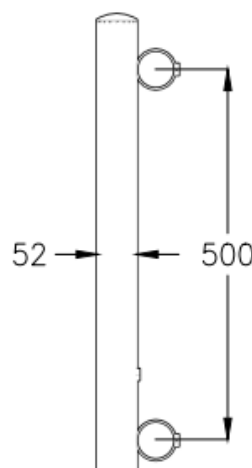
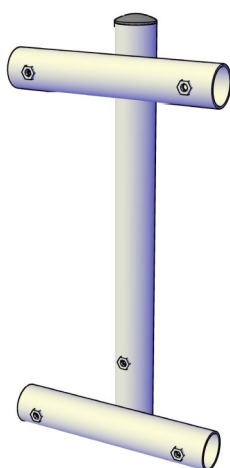


### TRS - Top Riser Unit

The Top Riser connects to the top of each upright and allows the top and middle rails to be evenly spaced whilst allowing the overall height of the rails to be adjusted to suit different applications.

#### Materials

It is manufactured from 2mm mild steel and has a hot dipped galvanised coated equivalent to BS EN ISO 1461. It is also available powder coated to any RAL colour.



# Components



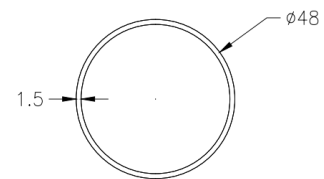
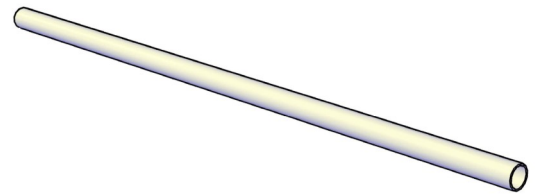
## Top Fixed Edge Protection - System Components

### CR1.5 - 1.5m Cross Rail

The cross rails are supplied pre-cut to 1.5m in length for ease of installation. This fixed length means there is no need to measure or cut the tubes to ensure the up-rights are spaced evenly.

#### 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.

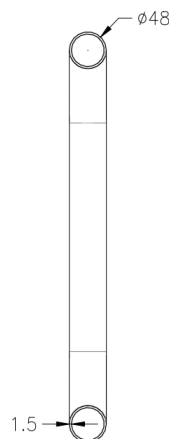
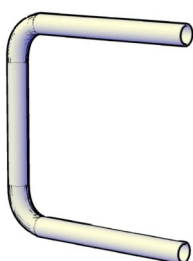
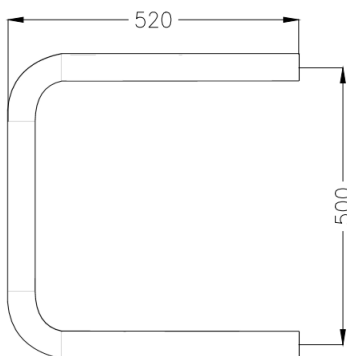
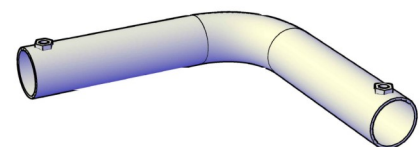
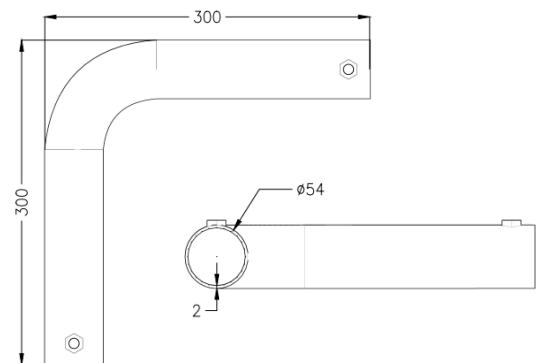


### SC90 - Swept Bend

The SC90 is an ergonomically designed 90° swept bend. This flexible pre-formed component can be used for both horizontal and vertical bends. The fitting incorporates zinc coated grub screws for easy installation.

#### Materials

The swept bend is manufactured from 2mm x 54mm steel tube, which has a hot dipped galvanised coating. It is also available powder coated to any RAL colour.



### DE180 - D-End Termination

The pre-formed 180° bend inserts into the top riser and is a quick and convenient way of terminating a run of guardrail. This flexible pre-formed component can be used for both horizontal and vertical terminations.

#### Materials

The D-End 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.

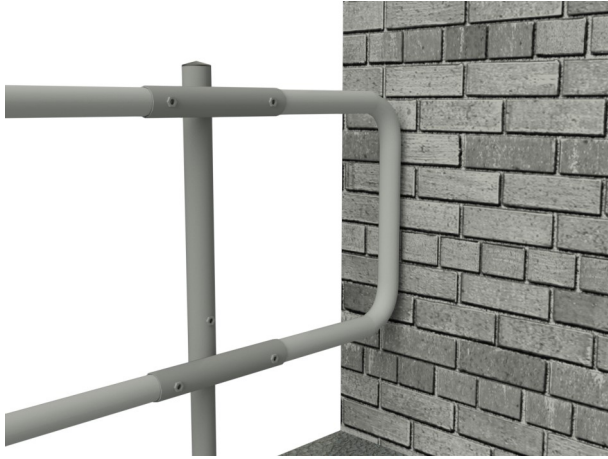
# Configuration



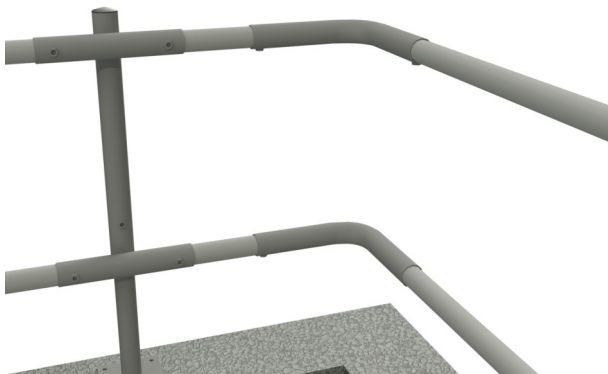
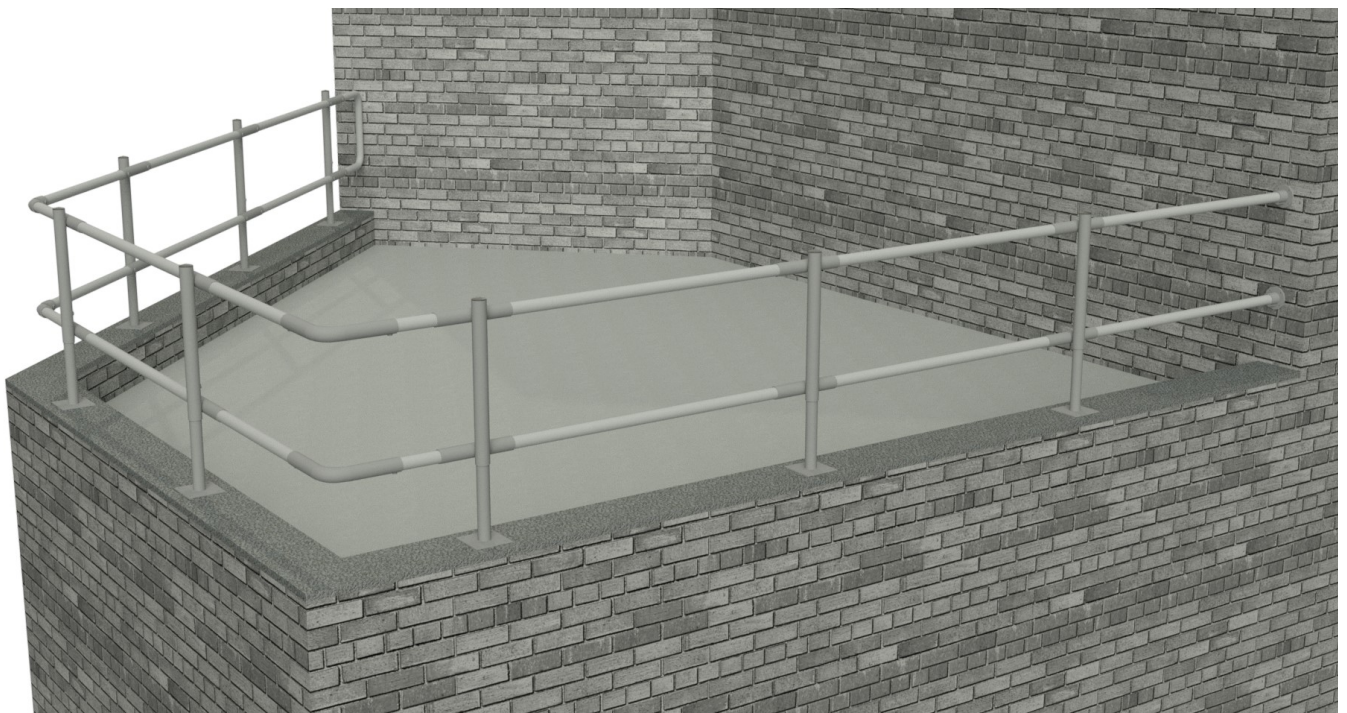
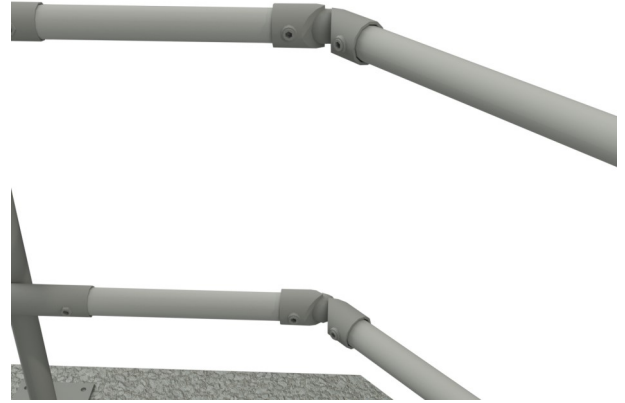
## Top Fixed Edge Protection - System Configuration

### Typical Layout

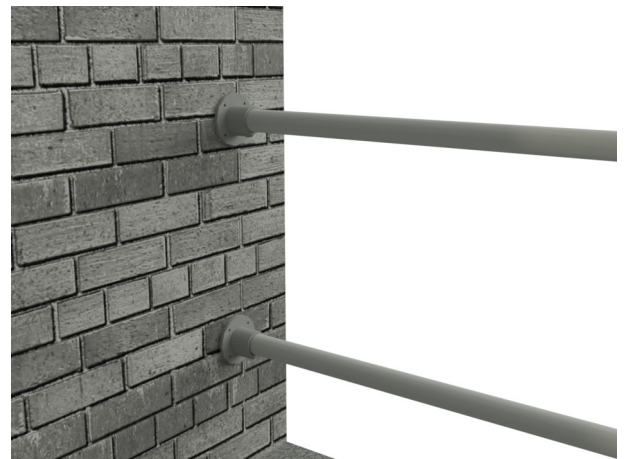
D-End Termination Detail



Variable Corner



90 Degree Corner



Wall Flange Termination Detail

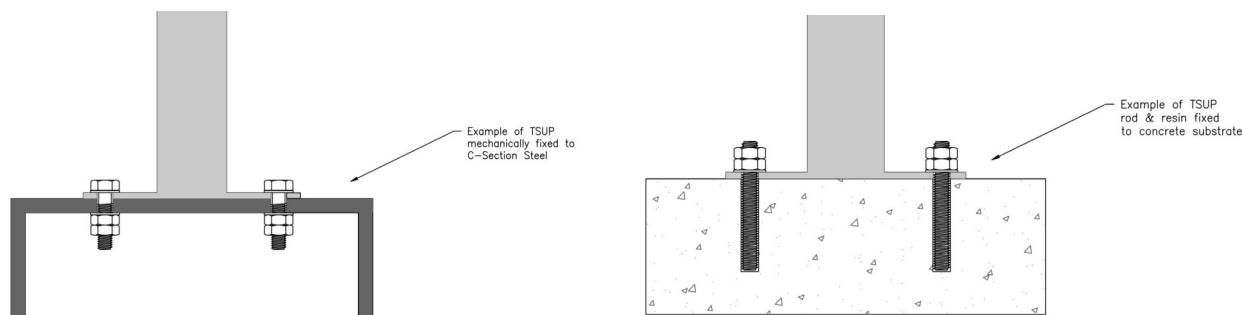
# Installation



## Top Fixed Edge Protection - System Installation

### Step One

Mechanically attach the base of the upright post to the substrate.



### Step Two

Slide the top riser over the upright post and secure at the correct height with the 5mm grub screw.

### Step Three

Insert the 1.5m cross rails in to the horizontal sections of the top riser unit. Once they are pushed all the way in, (against the positive stop in the middle), they can be tightened using the 5mm grub screw.

The above 3 steps are then repeated for the next upright.

### Step Four

When the guardrail needs to change direction, the cross rails need to be offered up and cut to the correct length. The 90 degree corner, or variable elbow then needs to be attached using the 5mm / 8mm grub screw. The offcut from the cross rails then need to be used for the other side of the corner to ensure that no gap is longer than 1.5 metres between uprights.

### Step Five

To finish your run of guardrail there are two options. The first option is a D-End termination which fits perfectly in to one side of top riser unit and butts up against the wall to close the gap. The second option is a wall fixed flange that is installed on to a vertical wall, and then the cross rails are attached to it.



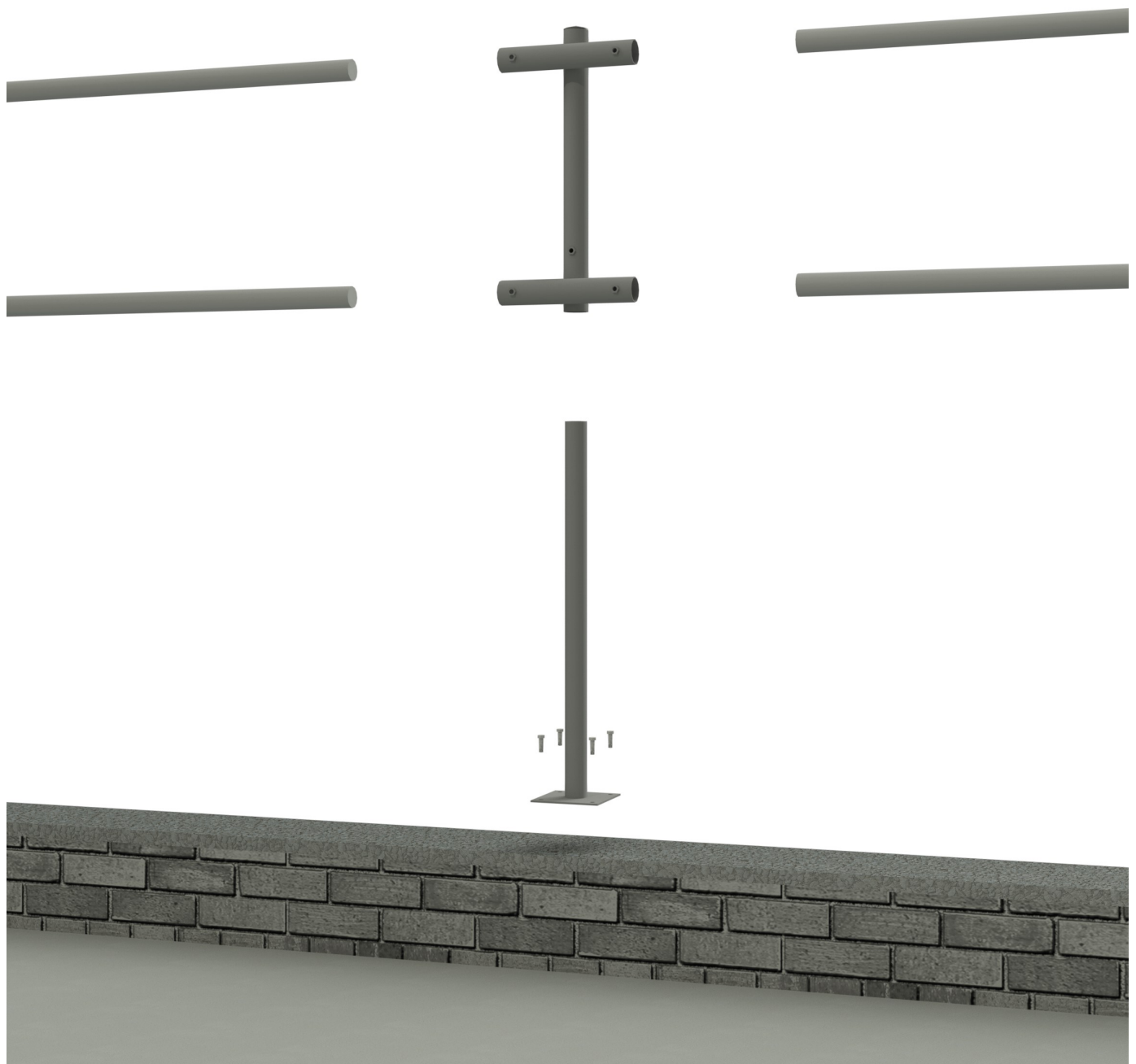
# Installation



## Top Fixed Edge Protection - System Installation

### Exploded Diagram

The below image shows the various components that make up the top fixed uprights.



# Maintenance

## Top Fixed Edge 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.



# Re-certification

## Top Fixed Edge Protection - System Re-certification

We recommend that the guardrail installation should be inspected periodically by a competent person. The frequency of these inspections will depend upon the environment, location, and utilisation, but should be at least every twelve months.

Visual inspection of the complete installation in accordance with the current needs of the client. Check 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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