



# FloorSpan™



FloorSpan™

Specification Guide

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## The Systems

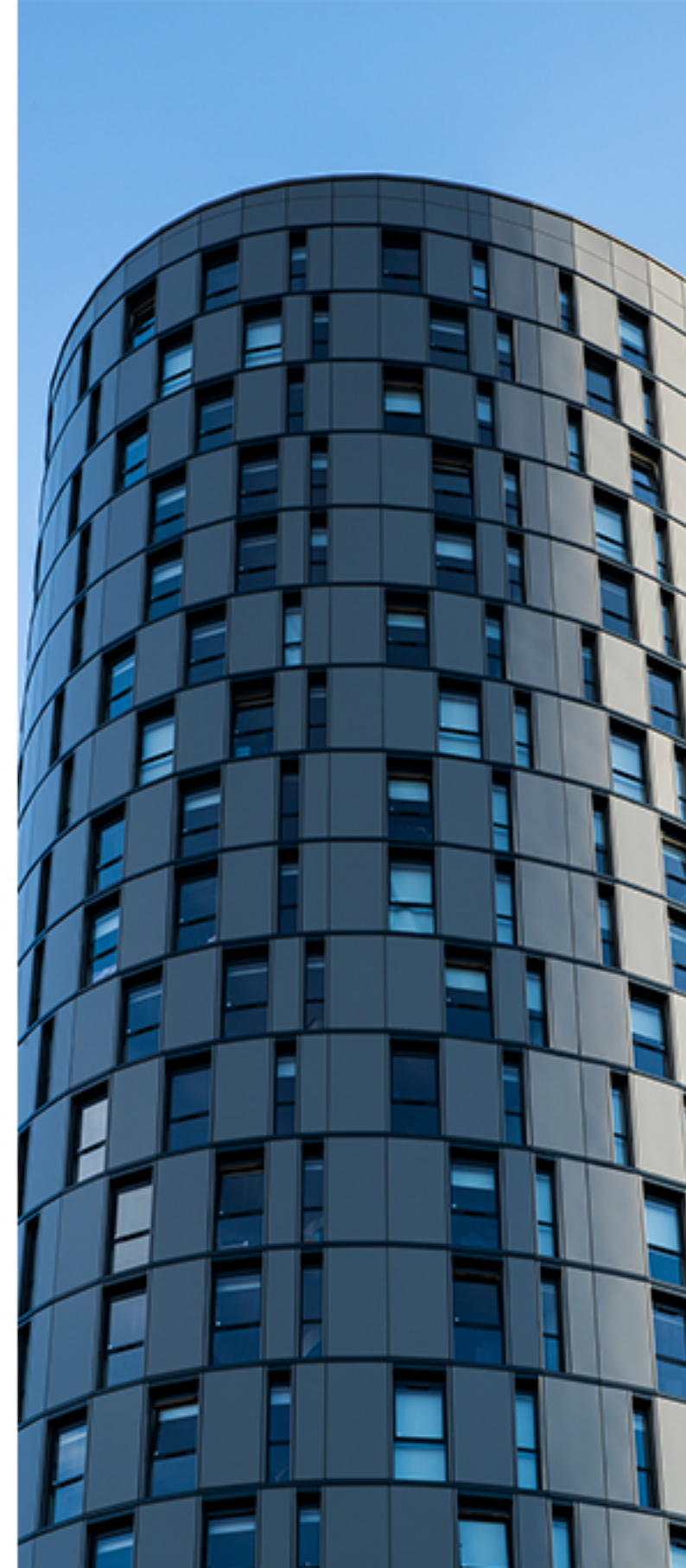
The systems comprise of an extruded aluminium support system, stainless steel connection to the existing structure, mineral fibre insulation, horizontal and vertical fire barriers and all necessary fixings, fittings and flashings as are required to provide a complete new outer skin to the building with either:

1. Flat aluminium powder coated panels face fixed to the rails with powder coated aluminium rivets – SYSTEM 1

or

2. Formed powder coated aluminium cassette panels secret fixed to supporting rails – SYSTEM 2

The elements of the system are formed from, wherever possible, standard components and are supplied to site in sizes to suit both the design details and the dimensions provided by the sub-contractor for the components. However, there will normally need to be some adaptation of some of the components on site to suit their specific location on the building and to provide the flexibility necessary in refurbishment works.



## Design Principles

Both systems are designed as "drained and back ventilated rainscreens" in accordance with the requirements of the CWCT document "The Design of Buildings with Ventilated Facades". All joints are closed, thereby allowing the majority of wind-blown moisture striking the external face of the cladding to be thrown off. However, any moisture that manages to penetrate the line of the cladding will be dissipated in the purposely designed ventilated air cavity directly to the rear of the cladding panels. Ventilation is obtained at the base and head of the cladding as well as at window cills and similar protrusions. Mineral fibre insulation is provided to the rear of the cavity across the whole face of the building and is fixed in accordance with the manufacturer's recommendations. The thickness of the insulation is determined by the U-value requirements of the building, the calculation of which also takes into account the cold bridging of the brackets penetrating the insulation. To minimise this effect the sheeting rails are designed to span floor to floor and sit in the air cavity directly in front of the insulation. The air cavity is divided up into fire compartments with horizontal and vertical fire barriers, positioned as required by the Building Regulations, as well as barriers around the perimeter of all protrusions through the system.

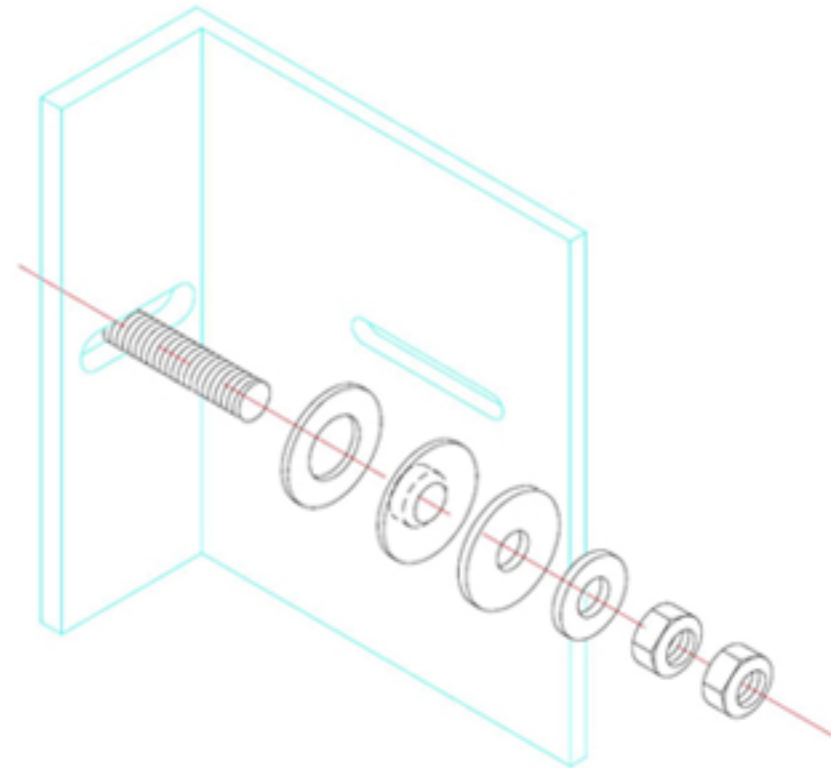
Overall, the system is conceived as a series of two storey concentric rings to accommodate both the expansion and contraction of the rails and panels, as well as any movement of the building structure itself. It is designed to provide a good and true appearance with the cladding following the broad lines of the building. Tolerances and adjustments are built into the system to allow for and even out minor localised discrepancies in line and level of substrate. The system is not, however, designed to provide a true and vertical box over an out of plumb building.



## Components of the support system

### 1. Primary angle bracket material

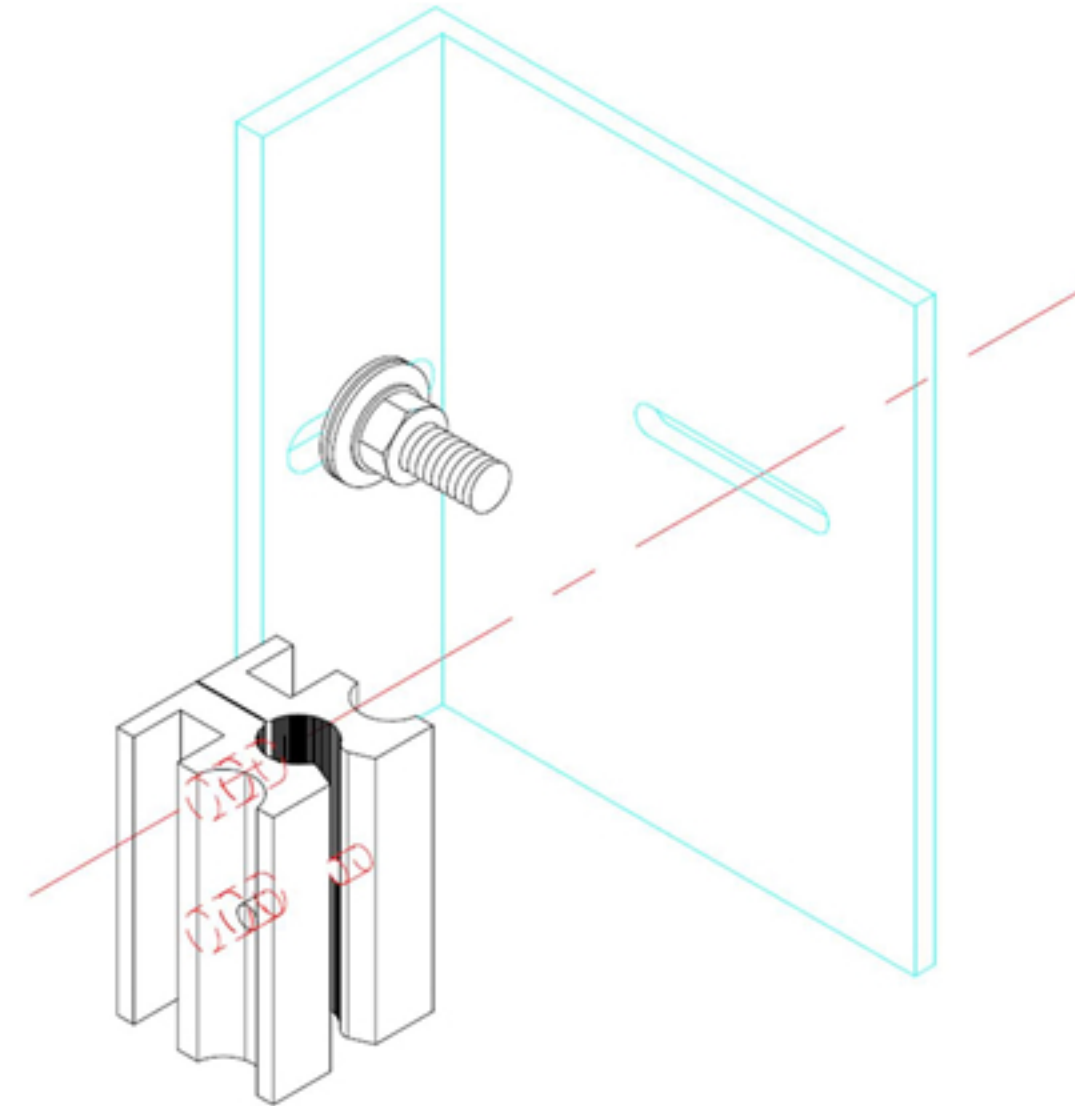
The primary angle bracket is extruded from either Grade 6082 T6 or 6005A T6 aluminium both fully heat treated to BS EN 755-2:2008.



The primary angle bracket is a predetermined length of unequal angle with slots provided on each leg to allow the tolerance in positioning of the rails. In all situations the shorter leg of the primary angle bracket sits against the substrate with the longer leg protruding to which is bolted the link bracket. Nominally the anchor fixing to the substrate is on the centre line of the sheeting rail supported by the bracket.

### 2. Link bracket

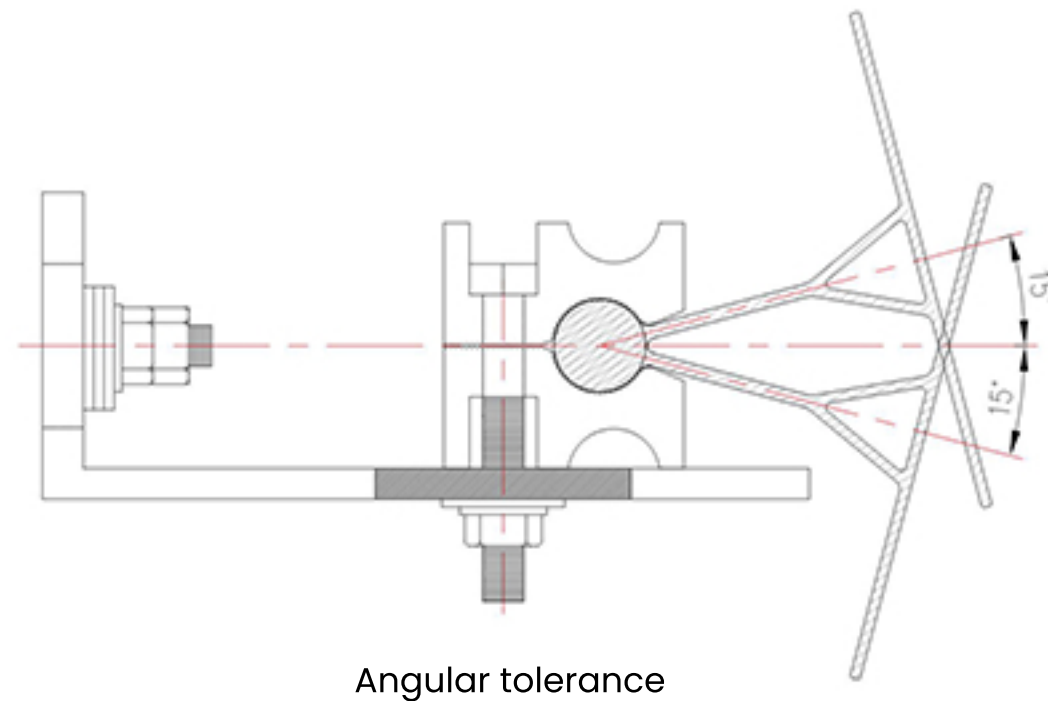
This is a proprietary two-part extrusion used to form the basic connection between the sheeting rail and the primary angle bracket and is extruded from aluminium grade 6063T6 fully heat treated to BS EN 755-2:2008.



### 3. Sheeting rails material

Sheeting rails are extruded from either Grade 6063 T6 or 6005A T6 aluminium fully heat treated to BS EN 755-2:2008.

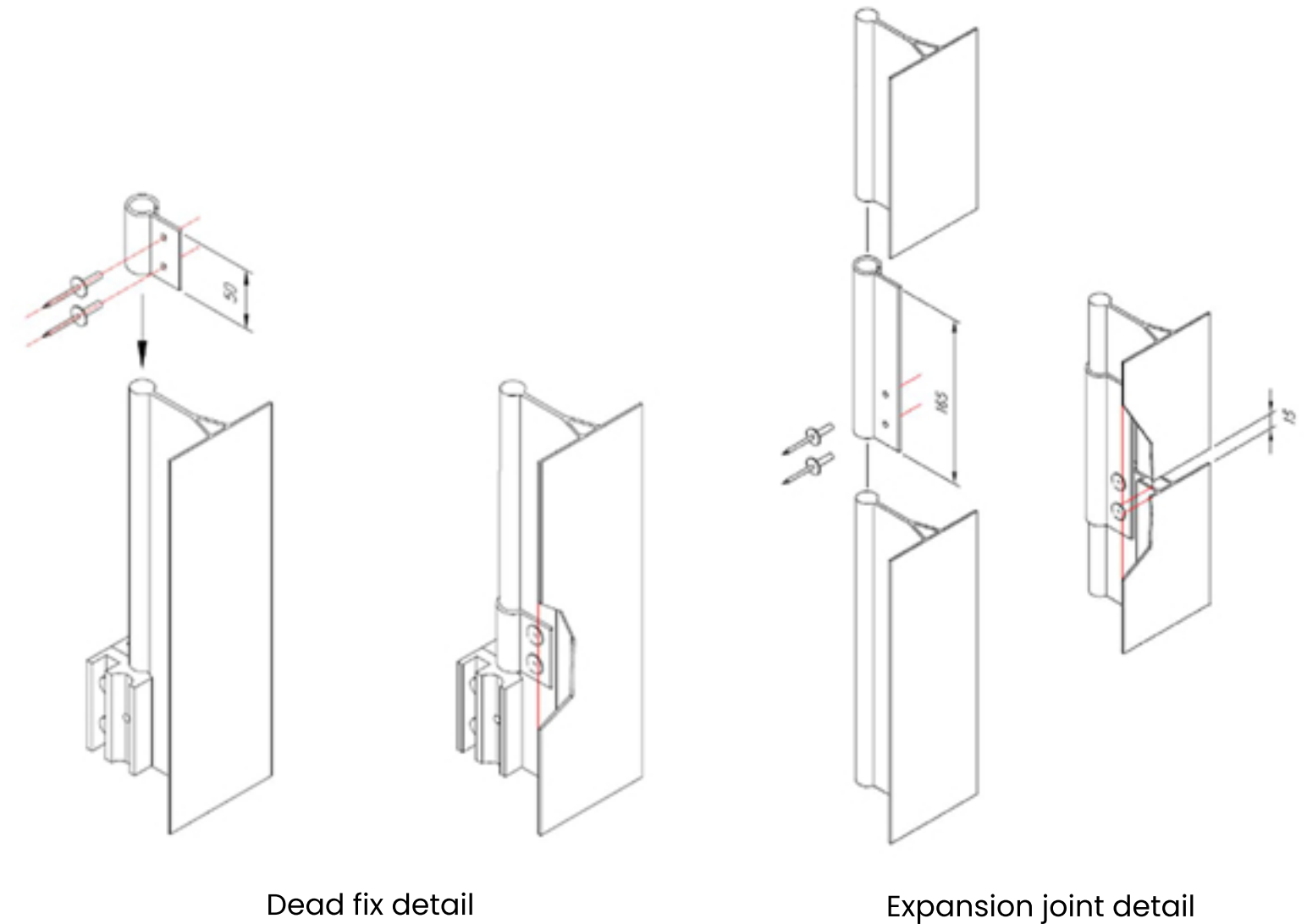
The sheeting rails as shown above are 100mm wide and 75mm deep and supplied to site either as part of a longer continuous rail or as an individual rail located between windows or other perforations to the cladding and can provide up to +/- 15deg. of angular tolerance in addition to both in/out and lateral tolerances.



### 4. Expansion joint link/dead load clip

Both the expansion joint link and the dead load clip are fabricated from the same extrusion. The extrusion is a proprietary design and extruded from aluminium grade 6063T6 fully heat treated to BS EN 755- 2:2008.

This extrusion is designed to provide movement between successive lengths of sheeting rail and is also used separately to transmit the dead load of the system back to the dead load bracket.



## Assembly of the support system

### Primary fixing

This is the bolted connection between the primary bracket and the substrate and is based on the use of a Grade 316 stainless steel bolt. The exact type of bolt to be used is subject to site testing of the substrate and is to be installed in accordance with bolt manufacturers supplied method statement.

VERTICALLY +/- 50mm from its designed location subject to any adjustments in loading capacity due to proximity of slab / concrete edges.

HORIZONTALLY +/- 15mm from the centre line of the vertical line of bolts within which it is located.

The bolt is installed through the primary bracket with an aluminium washer, a T-shaped plastic isolation washer, stainless steel teflon coated washer and stainless-steel nut and washer as supplied with the bolt indicated on the drawings.

### Primary angle bracket

The primary angle bracket is a predetermined length of unequal angle with slots provided on each leg to allow the tolerance in positioning of the rails. In all situations the shorter leg of the primary angle bracket sits against the substrate with the longer leg protruding to which is bolted the link bracket. Nominally the anchor fixing to the substrate is on the centre line of the sheeting rail supported by the bracket.

### Primary angle bracket isolation

A layer of proprietary foam tape, as supplied, is to be placed over the back face of the shorter leg of the bracket to cover the whole area of the seating of the primary angle bracket to isolate it from the substrate and provide a firm and level bearing.

### Mortar pad

Where required a pad of proprietary concrete repair mortar is to be placed on the substrate to cover the whole area of the seating of the primary bracket to provide a firm and level bearing.

### Link bracket

The link bracket is a two-part proprietary designed aluminium extrusion, 75mm long with two pre-drilled holes, 8mm diameter and is used in conjunction with the primary angle brackets. The two parts of the link bracket are connected to the primary bracket by means of an 8mm bolt through the top pre-drilled holes and through the slot in the outstanding leg of the primary bracket. After insertion of the sheeting rail the bolt through the link bracket is tightened to grip the rail. Final lining and levelling of the sheeting rail is achieved by adjusting the position of the link bracket within the slot. On completion of lining and levelling a hole is drilled through the outstand arm of the bracket using the hole in the bottom of the link bracket as a guide. This is then fitted with an 8mm bolt, as in the top hole to "lock off" the rail. In its final location the bolt through the link bracket and slot on the primary bracket must not extend to within 10mm of the front of the slot.



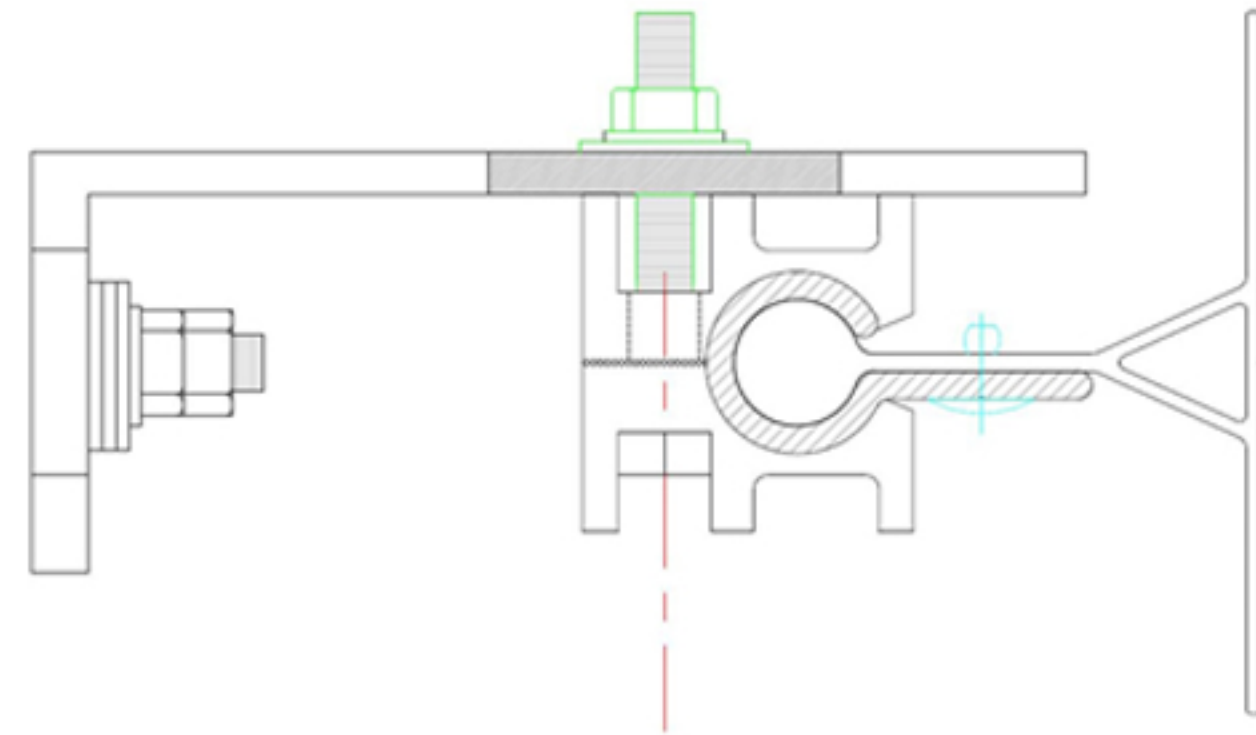
## Sheeting rails

### Continuous rails

These are normally supplied to site in individual two storey height lengths. Prior to offering the rails to the building the expansion joint link, a 165mm long proprietary extrusion, is to be riveted to one end of each rail and the dead load stop temporarily held on the rail. The rails are connected to the primary brackets via the proprietary link bracket. An expansion gap is allowed between each rail with the bottom of the upper rail sliding into, but not connected to, the expansion joint link riveted to the lower rail. After final lining and levelling of the rail, a through bolt is drilled and inserted between the link bracket and the primary bracket using the empty pre-drilled hole in the link bracket as a drilling locator. Both bolts in the link bracket connection to the primary bracket are to be tightened to a torque of 11 Nm. The dead load stop is then slid down onto the top of the dead load bracket, as indicated on the drawings, and riveted to the web of the sheeting rail. On completion the faces of the rails are covered with 100mm wide isolation tape.

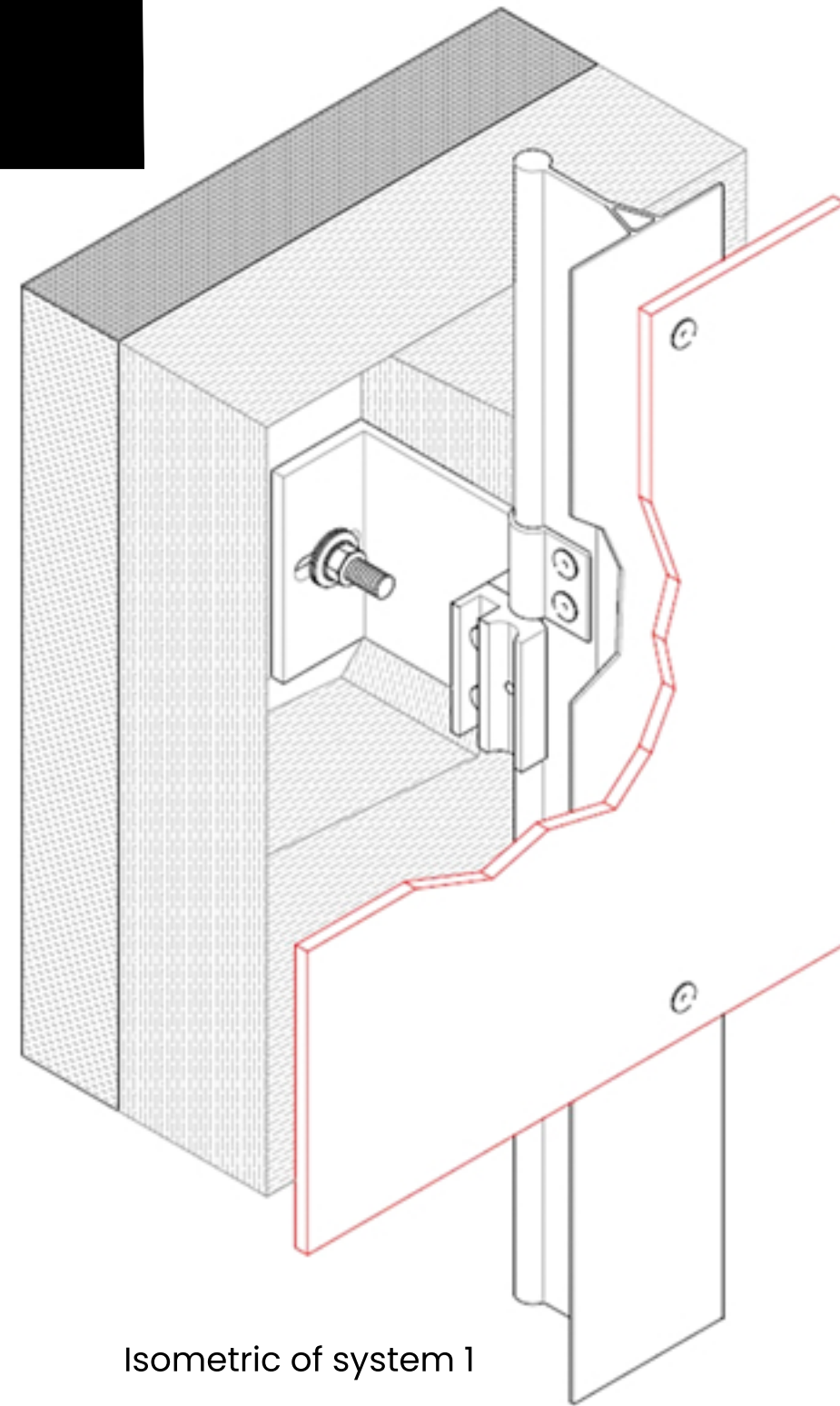
### Individual and under window rails

These sheeting rails are fixed to the building in the same manner as the continuous rails above. However, for these rails there is no requirement to introduce the expansion joint link. In this situation the bracket at floor slab is the designated dead load bracket and the link clip sits down on this and its extended arm is riveted to the web of the sheeting rail. All tolerances as stated above.

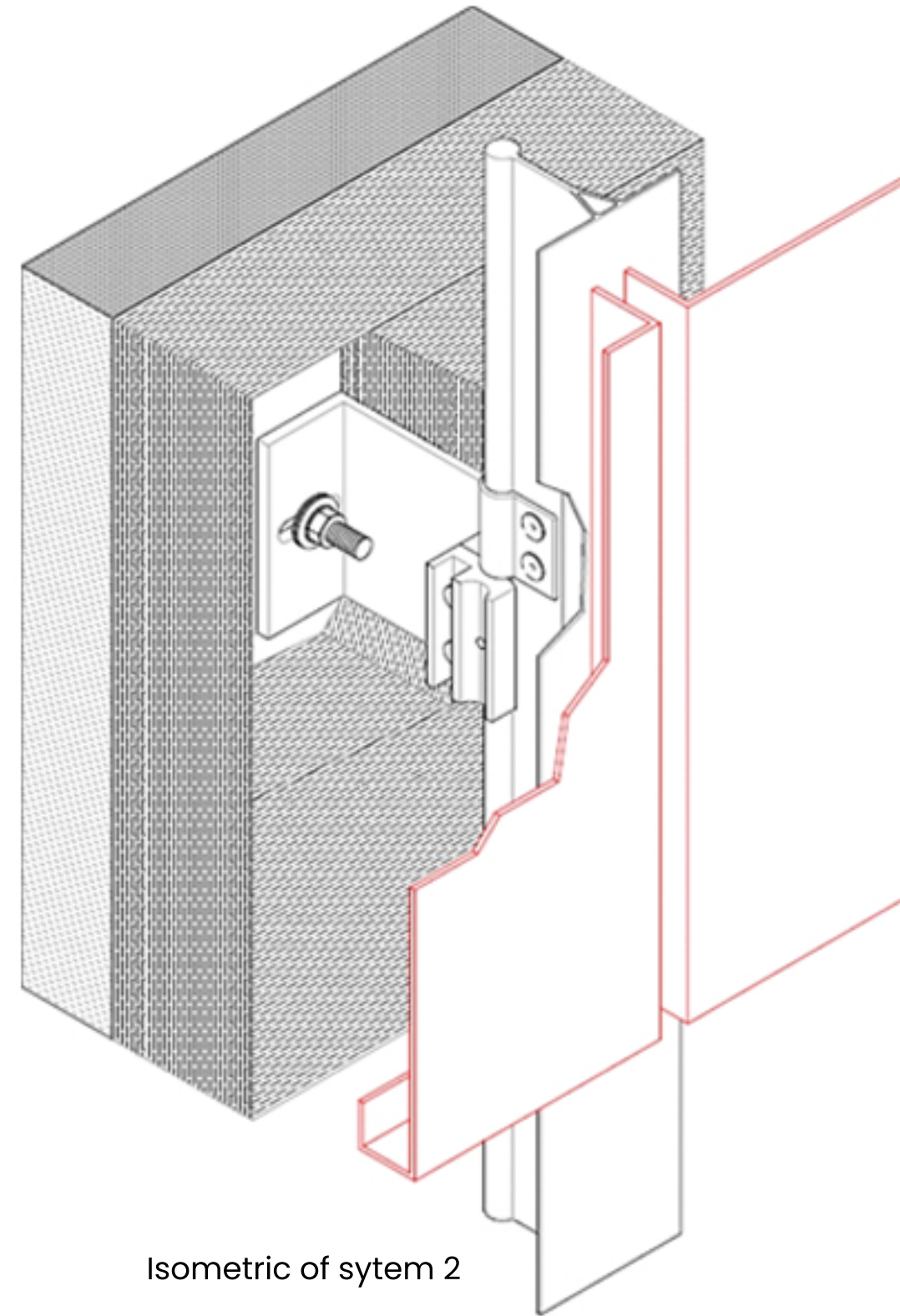


Plan on typical rail assembly

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Isometric of system 1



Isometric of sytem 2



The latest version of this brochure in digital format is available on our website. Details provided are subject to changes.  
If you require further information, please contact us. Last updated March 2022.

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