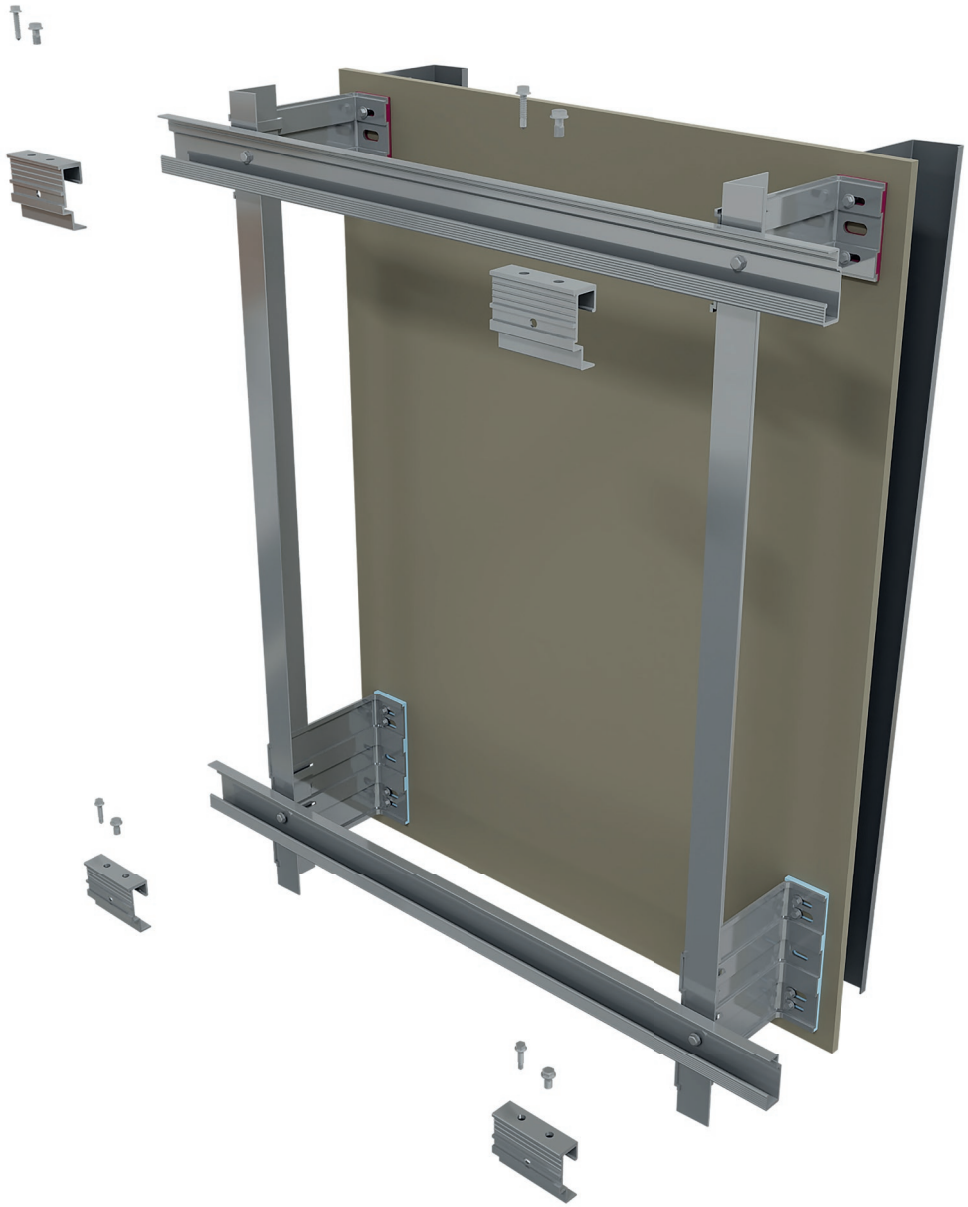
CL3
Subframe System

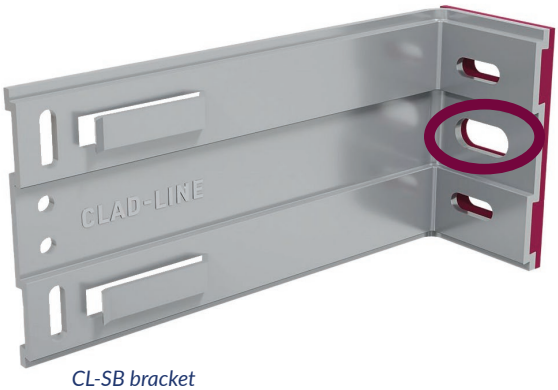
CLAD-LINE®
FRAMING SOLUTIONS



CL3 Subframe System Installation Guidelines

SUBSTRATES

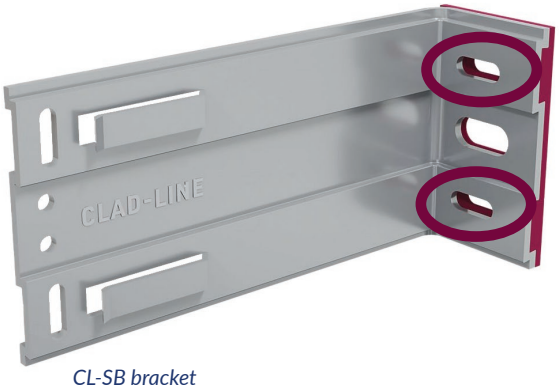
For concrete or masonry substrates ensure fixings are fitted through the **25mm x 11mm diameter slots.** 1 per CL-SB bracket and 2 per CL-DB bracket.



CL-SB bracket

CL-DB bracket

For steel or timber substrates ensure fixings are fitted through the **20mm x 7mm diameter slots.** 2 per CL-SB bracket and 3 per CL-DB bracket.



CL-SB bracket

CL-DB bracket

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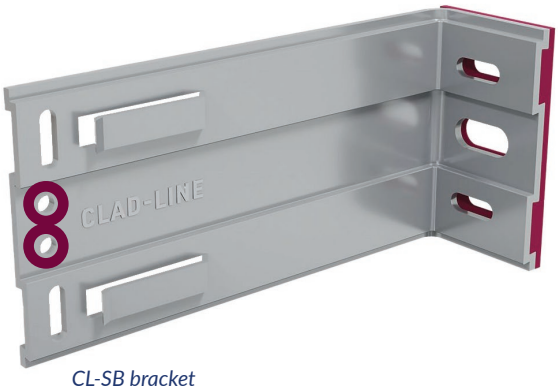
FIXED & SLIDING POINTS

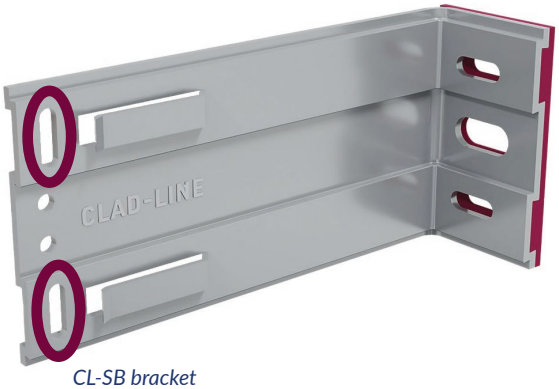
Fixed point brackets absorb a system's dead load. The vertical rails should be secured to the brackets through the **5.5mm diameter holes.** 2 per CL-SB bracket and 4 per CL-DB bracket.



CL-SB bracket

CL-DB bracket

Sliding point brackets absorb a system's live load and allow for rail expansion. The vertical rails should be secured to the brackets through the **18mm x 5.5mm diameter slots.** 2 per CL-SB bracket and 4 per CL-DB bracket.



CL-SB bracket

CL-DB bracket

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PROJECT SPECIFIC STATIC CALCULATIONS

Please refer to project specific static calculations for the correct arrangement of fixed and sliding point brackets and the quantity required for each rail. Typically, a fixed point bracket will be used at either the top or bottom of a vertical cladding support rail with the remaining being sliding point brackets.

FACADE ENGINE® SPECIFICATION BUILDER

CLAD-LINE'S web app Facade Engine can be used to generate a comprehensive set of project specific static calculations.

Facade Engine is a state-of-the-art analysis tool for all of your rainscreen subframe requirements. This free to use software provides comprehensive static calculations to help our customers generate the optimum framing design.

- ANALYSE internal forces, support reactions and system deflections
- VERIFY the analysed forces and deflections are lower than the system resistance
- OPTIMISE your framing design by iterating system variables

Facade Engine also includes the following:
- Integrated wind load calculator
- Fixing analysis and specification
- Secondary support top hat analysis

Comprehensive analysis of the CL1, CL2 and CL3 bracket and rail systems as well as the unique Floor 2 Floor solution.

Access Facade Engine at **www.clad-line.com** or call **01543 222500** for assistance.

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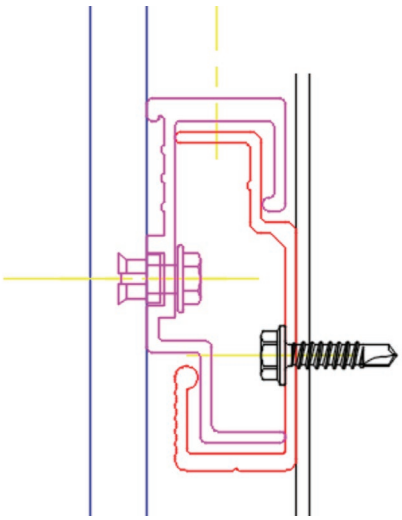
CL3 HORIZONTAL CARRIER RAILS & HANGERS

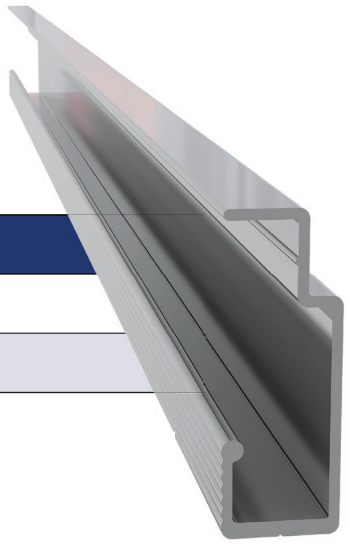


CL3 is CLAD-LINE's subframe system for mechanically secret fixed applications, suitable for use with Rockpanel, high-pressure laminate (HPL), ceramic, thin stone and fire cement.

CL3 panel hangers which are secured to the rear face of the cladding panel simply 'hook-on' to the horizontal rails.

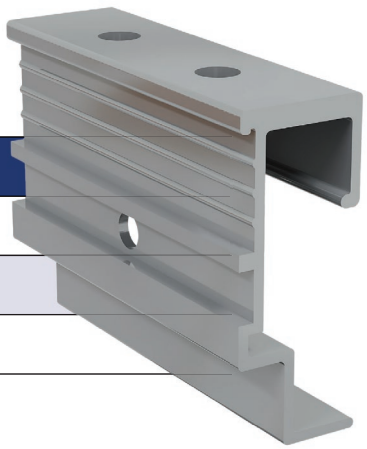
The CL3 horizontal rails can be fixed back to the CL1, CL4 or CLF2F systems.

An allowance within the cladding zone of 26mm is required to provide space for the CL3 carrier rails and panel hangers.



CL3 Horizontal Carrier Rails

Description	Product Code
CL3 Rail 3000mm	C3-RAIL/3000
CL3 Rail 6000mm	C3-RAIL/6000



CL3 Hangers

Description	Product Code
CL3 Hanger Bracket Standard	C3-H/BRKT/STD
CL3 Hanger Bracket Adjustable	C3-H/BRKT/ADJ
CL3 Hanger Bracket Fixed Point	C3-H/BRKT/FP

CL3 Subframe System

CLAD-LINE® FRAMING SOLUTIONS

DESIGN SUGGESTIONS
CL3 HORIZONTAL CARRIER RAILS

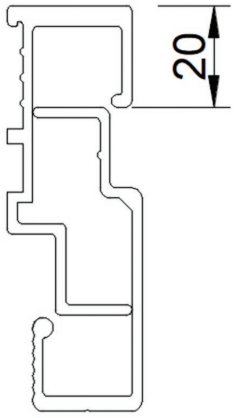
The unsupported cantilever of any CL3 horizontal carrier rail should not exceed 150mm or as dictated by project specific static calculations. At building corner locations, the carrier rail can cantilever up to 300mm if it is restrained to the adjacent CL3 rail using a CL1 60x40 L rail.

The CL3 horizontal rail must not span across a building movement joint.

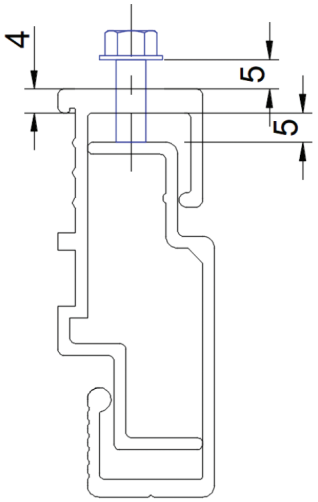
CL3 HANGERS

The CL3 system is supplied 'flat pack' and the CL3 hangers are ready to be attached to the rear of the cladding panel. Typically, the top row consists of adjustable hangers which allow you to line and level the cladding panel once installed. One fixed point hanger should be used towards the centre of the top row and a dead fixing should be fitted once the panel has been correctly adjusted. All remaining CL3 hangers should be standard hangers.

The hangers should be attached to the rear of the cladding panel using the fixing recommended by the board manufacturer and fitted to the manufacturer's guidelines.



A lift of 20mm is required for the panel hanger to clear the horizontal carrier rail. Therefore, we suggest a minimum 30mm clearance gap for ease of installation.



Adjustable panel hangers allow for a 10mm adjustment. If the required adjustment is over this limit, remove the panel and reposition the CL3 horizontal carrier rail.

CL3 Subframe System

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INSTALLATION GUIDELINES

1. Mark the location of CLAD-LINE brackets ensuring that single and double brackets are positioned correctly for the fixed and sliding points. Check for line and level and ensure the orientation of the bracket is correct. ***Please note: The isolation pad comes pre-fitted to the rear of the bracket. If the pad has been removed it can be re-installed by pressing it into the bracket profile. The pad/bracket connection is designed to be an interference fit.***

2. Secure the brackets to the building substrate using the appropriate anchors/fixings (determined through project specific calculations). Ensure the fixings are fitted through the correct fixing hole/slot and the correct number of fixings are used.

3. Insert the vertical rails into the brackets support fingers. There should be a minimum of 20mm of the vertical rail inserted into the support fingers.

4. Check the setting out and alignment of the rail face using a laser level or string line.

5. Fix the vertical rails to the brackets using 4.8mm x 19mm TEK screws. Ensure the fixings are fitted in the correct position for the fixed and sliding point brackets and that the correct amount of fixings are used.

6. Proceed with the installation of the remainder of the CLAD-LINE framing system.

CL3 Horizontal Carrier Rail Installation

1. The CL3 horizontal carrier rails are fixed to the face of the vertical support rails using 2 low profile 5.5 x 25mm TEK screws or as dictated by project specific structural calculations.

2. The CL3 horizontal carrier rails should be fixed to vertical T rails at joint locations. An oversized hole (10mm diameter) should be drilled in the carrier rail to allow for movement.

   For intermediate support, the CL3 horizontal carrier rail should be fixed to a vertical L rail using 2 fixings per intersection.

CL3 Subframe System

CLAD-LINE® FRAMING SOLUTIONS

INSTALLATION GUIDELINES CONTINUED

Before commencing the installation of the cladding panels check the line and level of the vertical rails, check the bracket to rail fixings are fitted into the correct holes or slots and the correct number of fixings have been used. Check the fixed point and sliding point brackets have been correctly positioned and finally ensure the primary fixings/anchors have been fitted as per the manufacturer's recommendations.

Proceed with the installation of the cladding panels. Please refer to the Design Suggestions outlined within this document for the correct installation of the CL3 panel hangers.

Please note: These are installation guidelines only.
The correct installation of the system remains the responsibility of the installer.