

### About NVELOPE®

NVELOPE<sup>®</sup> rainscreen cladding brackets and framework simplify the complexity of installing façades. NVELOPE<sup>®</sup> systems are designed to provide a vertical support for most façade types. NVELOPE<sup>®</sup> purpose-designed brackets allow for final alignment and adjustment.

The NVELOPE® bracket range includes single and double variations of each bracket size, the difference being the depth of the bracket (75mm single, 150mm double). A double bracket is capable of supporting higher cladding loads, and is used in the fixed point location for projects that feature more demanding wind or cladding loads.

The substrate slot variations on NVELOPE® brackets are to suit a wide range of substrate materials. For steel and timber substrates 6.5mm slots are used; for brick, block and concrete, the 11mm slots are used. The single bracket includes both slot variations so is suitable for all substrates.

### Disclaimer

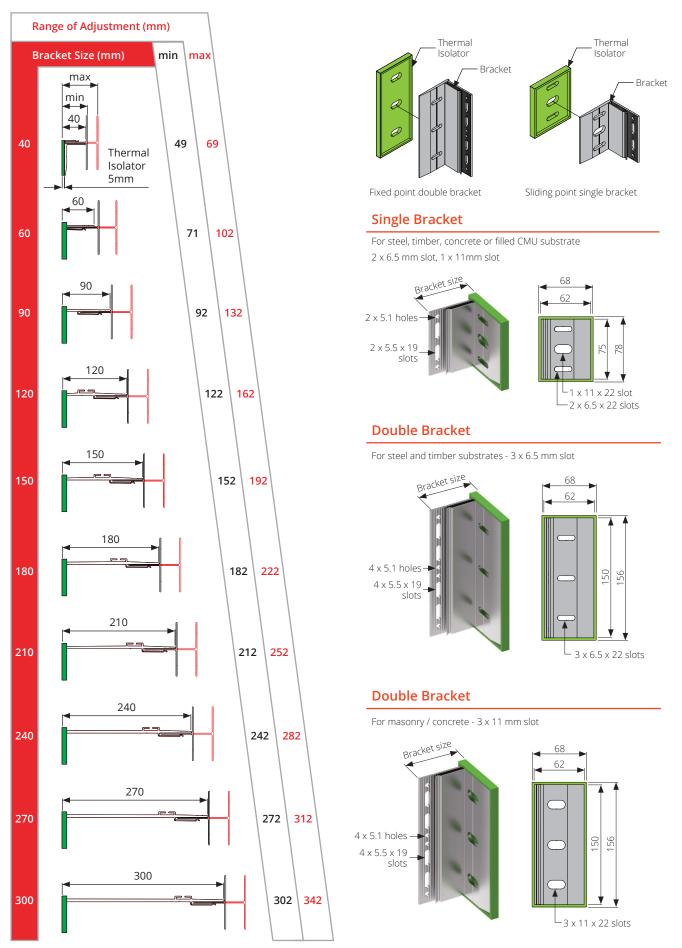
The opinions expressed in this guide does not relieve the responsibility of building designers, qualified architects, engineers and installers to provide specific advice relating to the structural performance of the cladding and external walls for each individual building that the Nvelope cladding fixing system is used on.

The information in this document is correct at the time of issuing. However, due to our committed program of continuous development we reserve the right to amend alter the information contained in this document without prior notice. Please contact DC Tech or visit www.dctech.com.au to ensure you have the most current version.

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Isolators are included as standard. If isolators are not required, reduce dimensions by 5mm

Brackets - Codes

### **Single Bracket - Universal**

For steel, timber, concrete or filled CMU substrate 2 x 6.5 mm slot, 1 x 11mm slot

Product Code	Size		
Product Code	(mm)		
01/VB040S-11/6.5	40		
01/VB060S-11/6.5	60		
01/VB090S-11/6.5	90		
01/VB120S-11/6.5	120		
*01/VB150S/11-6.5	150		
*01/VB180S/11-6.5	180		
*01/VB210S/11-6.5	210		
*01/VB240S/11-6.5	240		
*01/VB270S/11-6.5	270		
*01/VB300S/11-6.5	300		

For steel and timber substrates			
3 x 6.5 mm slot			
Product Code	Size		
	(mm)		
01/VB040D-6.5	40		
01/VB060D-6.5	60		
01/VB090D-6.5	90		
01/VB120D-6.5	120		
*01/VB150S-6.5	150		
*01/VB180D-6.5	180		
*01/VB210D-6.5	210		
*01/VB240D-6.5	240		
*01/VB270D-6.5	270		
*01/VB300D-6.5	300		

**Double Bracket - 6.5** 

### **Double Bracket - 11**

For masonry / concrete 3 x 11mm slot Size **Product Code** (mm) 01/VB040D-11 40 01/VB060D-11 60 01/VB090D-11 90 01/VB120D-11 120 \*01/VB150D-11 150 \*01/VB180D-11 180 \*01/VB210D-11 210 \*01/VB240D-11 240 \*01/VB270D-11 270 \*01/VB300D-11 300

\* Brackets subject to availability. Contact DC Tech for further details

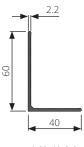
### Extrusions

Generally, extrusions are cut to lengths that reflect the height of the panels that are going to be fixed to them. Typically storey-height profiles are cut so that the panels are located on one set of vertical profiles and do not 'bridge' the expansion gap between two profiles. These are secured to the bracket using a secondary fixing.

### L Rails

Product Code	Description	
*02/L60-40-2.2-3000	L Profile 60 x 40 x 2.2 x 3000	
02/L60-40-2.2-6000	L Profile 60 x 40 x 2.2 x 6000	

Powder coating or anodising available upon request \*Available upon request, lead time applies

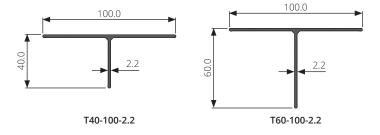




### T Rails

Product Code	Description
*02/T40-100-2.2-3000	T Profile 40 x 100 x 2.2 x 3000
02/T40-100-2.2-6000	T Profile 60 x 40 x 2.2 x 6000
*02/T60-100-2.2-3000	T Profile 60 x 100 x 2.2 x 3000
02/T60-100-2.2-6000	T Profile 60 x 40 x 2.2 x 6000

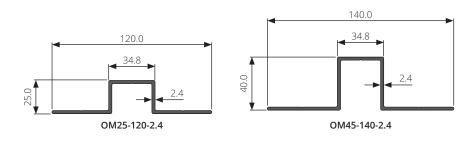
Powder coating or anodising available upon request \*Available upon request, lead time applies



### **Omega Rails & Trim**

Product Code	Description	
02/OM25-120-2.4- 6000	-2.4- 6000 25mm Omega - Mill Finish 6000	
*02/OM25-120-2.4-6000-PC	000-PC 25mm Omega - Powder Coat Finish 6000	
*02/OM40-140-2.4-6000	-6000 40mm Omega - Mill Finish 6000	
*02/OM40-140-2.4-6000-PC	40mm Omega - Powder Coat Finish 6000	

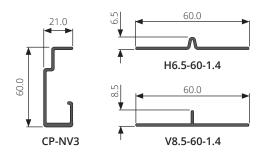
Powder coating or anodising available upon request \*Available upon request, lead time applies



### NV3 Rails, Trim

Product Code	Description		
02/CP-NV3-3000	Carrier Profile NV3 System x 3000		
02/CP-NV3-6000	Carrier Profile NV3 System x 6000		
02/V8.5-60-1.4-3000-PCBK	Vertical Express Joint Backing Trim - Black Powder Coat 8.5 x 60 x 3000		
02/H6.5-60-1.4-3000-PCBK Horizontal Express Joint Backing Trim - Black Powder Coat 6.5 x 60			
06/T61102-25M 12mm x 3.2mm thick single sided EPDM tape - 25m roll			
06/T62936-25M	18mm x 1.6mm thick double sided PE foam tape - 25m roll		

Powder coating or anodising available upon request





06/T61102-25M

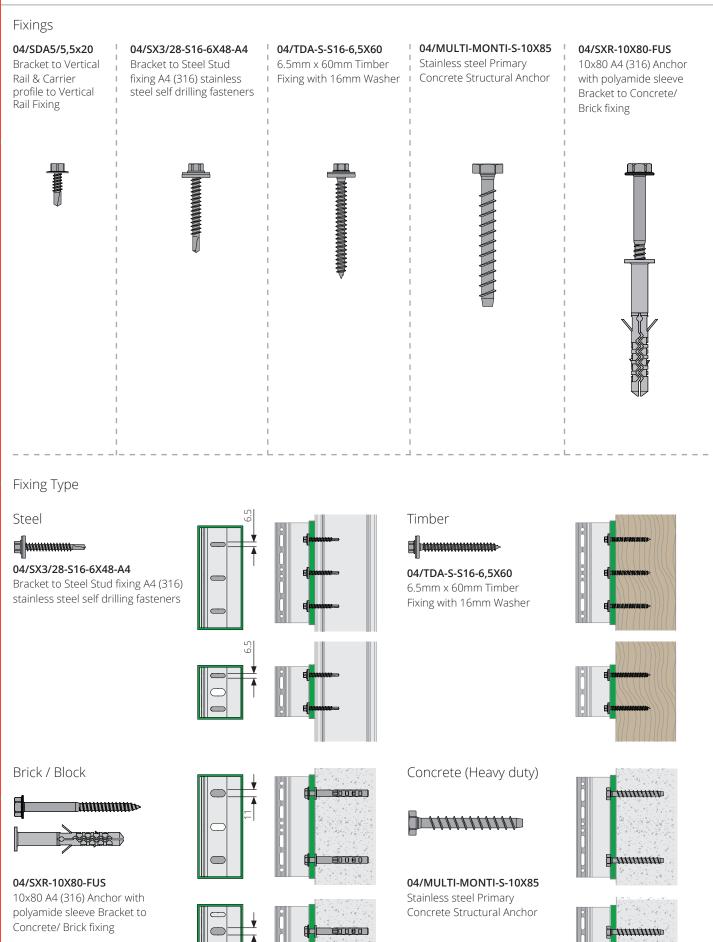


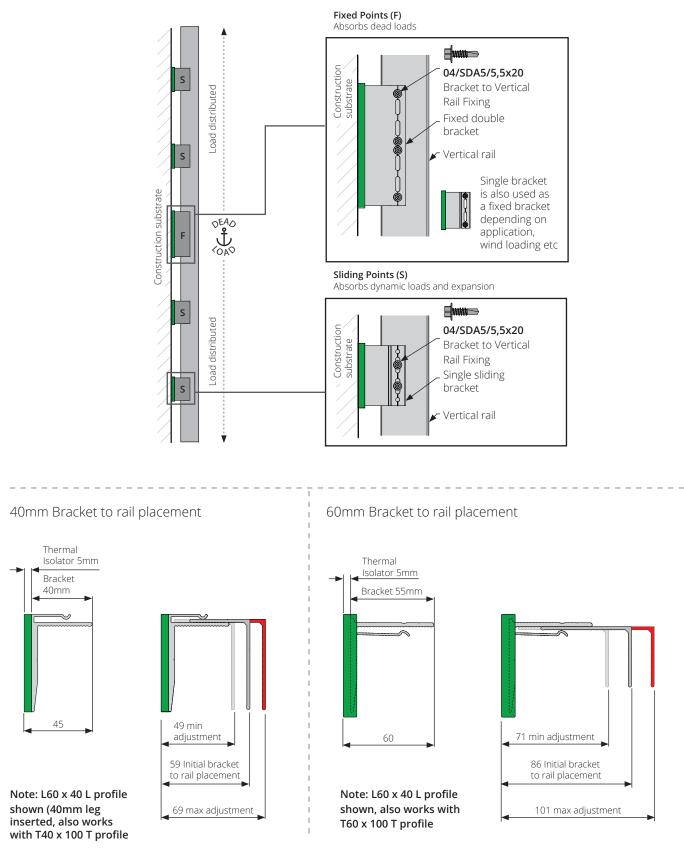
06/T62936-25M



Blind Rivet 3.2mm x 12mm blind pop rivet (Not supplied by DC Tech)

### Nvelope | Framing | Components

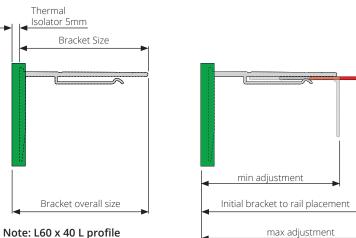




Isolators are included as standard. If isolators are not required, reduce dimensions by 5mm

### Nvelope | Framing

### 90mm - 300mm Bracket to rail placement



Bracket overall		Rang Adjus	ge of tment
size (mm)	rail setting (mm)	Min	Max
()	()	(mm)	(mm)
90	112	92	132
120	142	122	162
150	172	152	192
180	202	182	222
210	232	212	252
240	262	242	282
270	292	272	312
300	322	302	342

Note: L60 x 40 L profile shown, also works with T60 x 100 T profile

Bracket to rail placement - Bracket Extensions



Bracket extension piece single

min adjustment max adjustment

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Bracket overall size (mm)	Range of Adjustment		
	Min	Max	
	(mm)	(mm)	
270 + extension	384	424	
300 + extension	414	454	

Note: L60 x 40 L profile shown, also works with T60 x 100 T profile Example to show largest possible cladding zones. Extension piece is compatible with all bracket sizes, and is available as a single or a double

01/EX-PC-150 Bracket extension piece double

### Nvelope | Framing | Installation

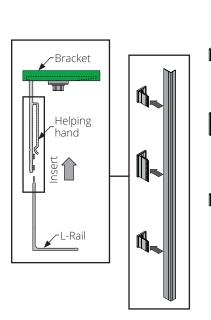
# **Recommended Tools** */*\$ AND TO THE REAL AND THE REAL AN TO Ø7mm drill bit Measuring tape Cordless drill Socket driver Spirit level Health and Safety DC Tech recommends the use of personal protective equipment (PPE) when installing the Nvelope system 1 Bracket Installation The position, bracket type (single or double) and number of brackets as per specified distances nominated by the wind loading and cladding weights. stud spacing or nominated bracket spacing Secure brackets to substrate using recommended fixing. S Ð Fixed Points (F) Absorbs dead loads Stud fixing shown vertical spacing of brackets -X3 Sliding Points (S) Absorbs dynamic loads and expansion Stud fixing shown Masonry fixing shown Masonry fixing shown Ċ NUMBER OF Communication of the second se R S X-Oppin **x1 x2**

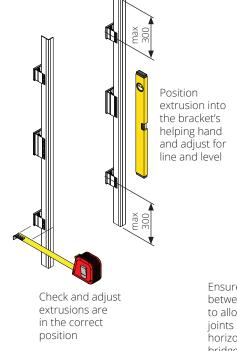
Refer to bracket fixing guide (page 6) for fixing according to the building substrate

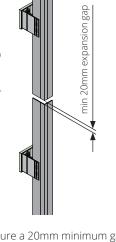
### Nvelope | Framing | Installation

### **1** Fitting extrusions

Once the brackets are aligned in the correct positions, fit the cut length profiles into the helping hand of the bracket.





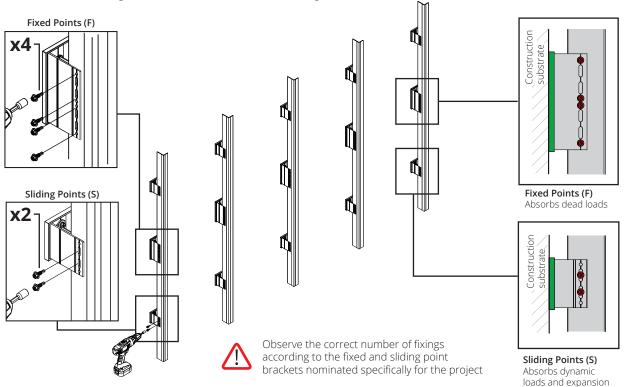


Expansion Joint

Ensure a 20mm minimum gap between the ends of the rails to allow for expansion. These joints shall coincide with panel horizontal joint i.e. panel shall not bridge over this gap

### 2 Fixing extrusions

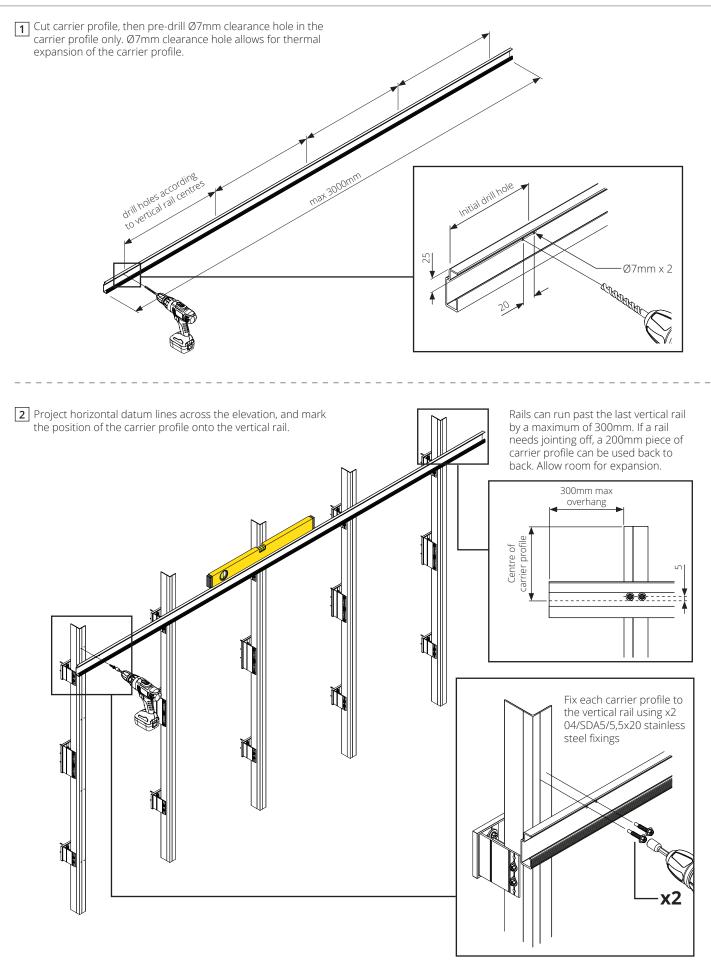
Secure extrusions using the 04/SDA5/5,5x20 stainless steel fixing.



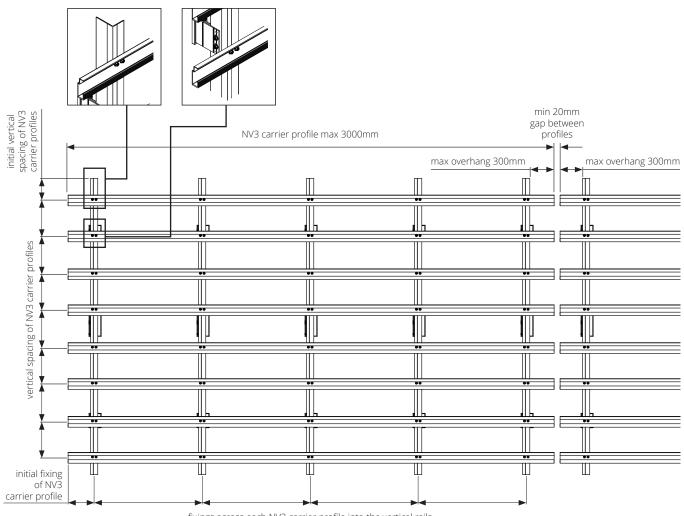
# Fitment check

Once all brackets and extrusions are installed to an area of the project, the following checks should be carried out:

- 1. Number of fixings and their position in each bracket
- 2. Line and level of the profiles in relation to each other



**3** Install remaining carrier profiles according to project specific vertical spacings. Spacings differ according to wind loading, weight of cladding and cladding type.





### Nvelope | Framing | Installation | Omega rail with NV3 carrier profile

### **Recommended Tools**



Cordless drill



Socket driver



Ø7mm drill bit

Constitute of

Measuring tape



Spirit level

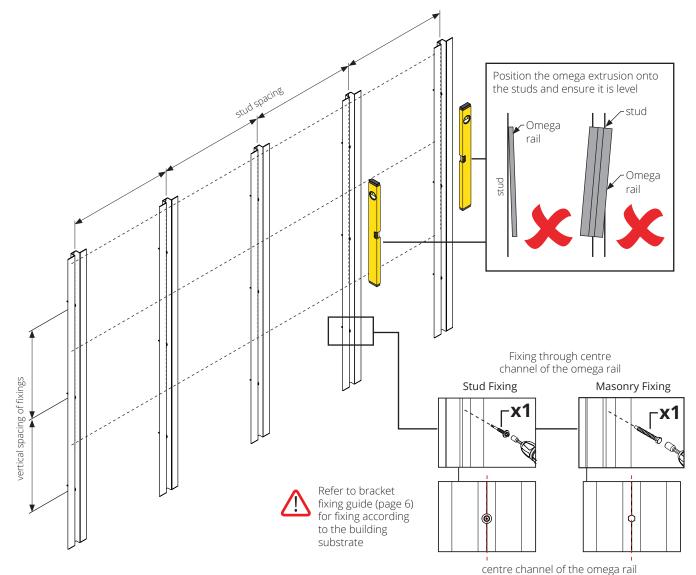
### Health and Safety

DC Tech recommends the use of personal protective equipment (PPE) when installing the Nvelope system



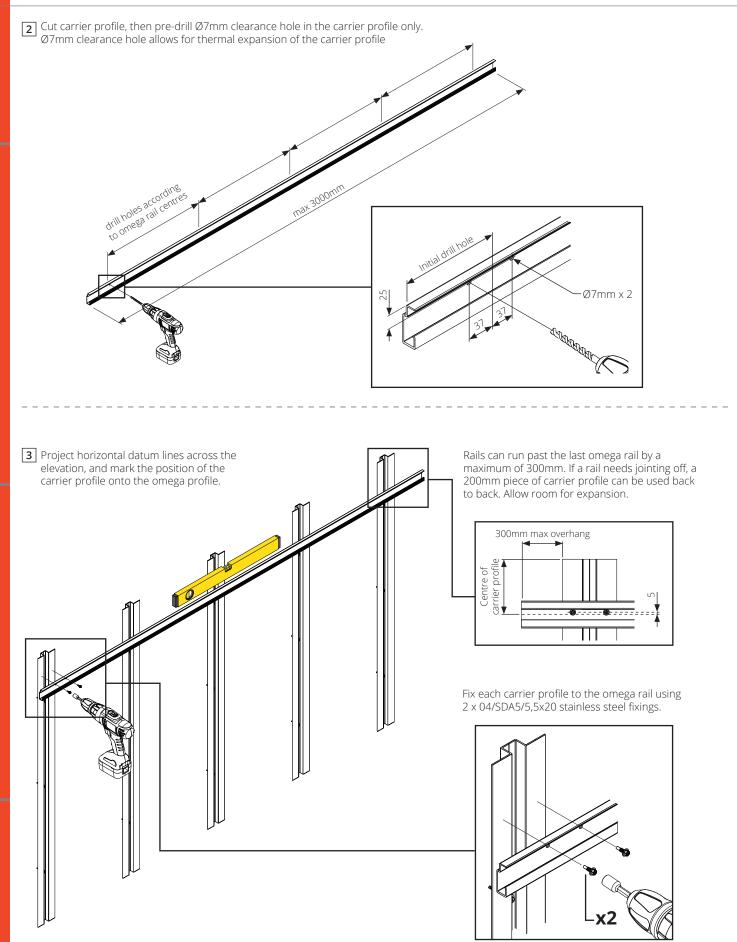
### **1** Omega rail installation

The number of fixings onto stud centres as per specified distances nominated by the wind loading and cladding weights. Secure omega rail to substrate using recommended fixing.

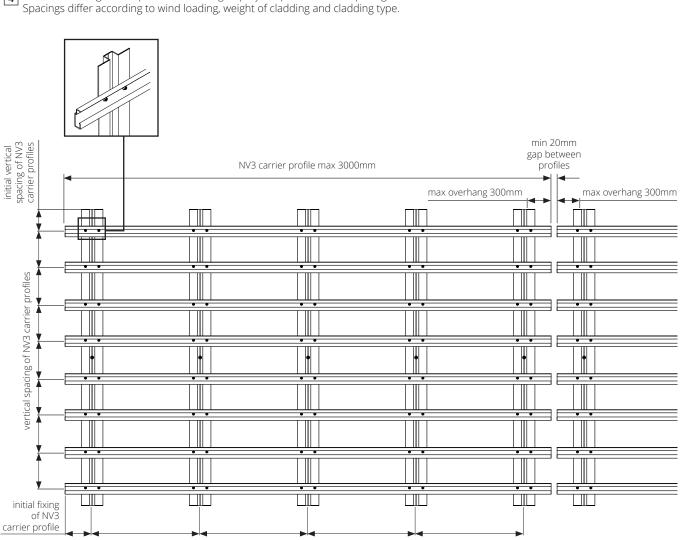


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### Nvelope | Framing | Installation | Omega rail with NV3 carrier profile



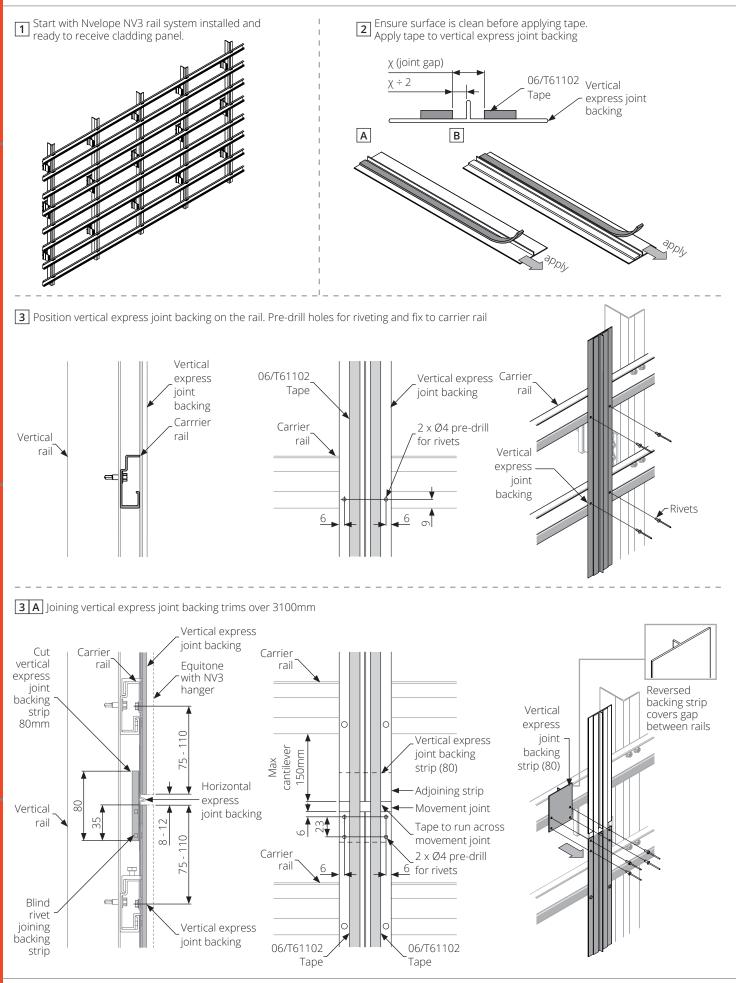
Nvelope NV3 | EQUITONE | SFS TUx-S



**4** Install remaining carrier profiles according to project specific vertical spacings. Spacings differ according to wind loading, weight of cladding and cladding type.

fixings across each NV3 carrier profile into the omega profile

### Nvelope | Framing | Installation | Vertical express joint closer



# Panel Preparation Tools

Spirit level

Measuring tape

Ruler

Pencil

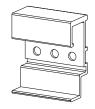
### Health and Safety

DC Tech recommends the use of personal protective equipment (PPE) when working with Equitone panels

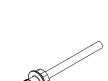
Mounting components



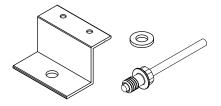
**03/NV3-TUF-S-ADJ-3.5-M6** NV3 Levelling hanger 3.5mm thick for TUF - Inc. Adjust screw (3 holes)



**03/NV3-TUF-S-STAT-3.5** NV3 Static hanger 3.5mm thick for TUF - (3 holes)

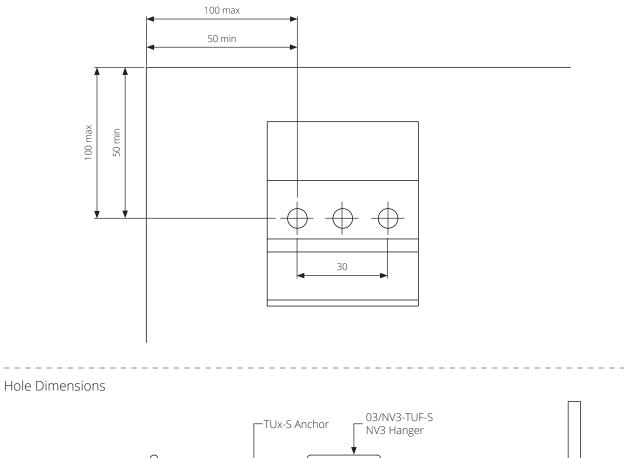


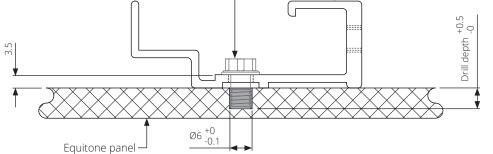
**04/TUF-S-6xA-A4** TUF-S fixing A4 Stainless Steel (A) = Length



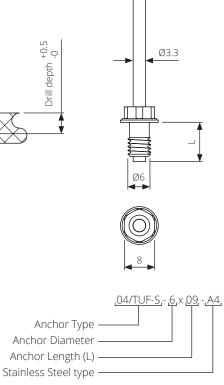
**03/NV3-SL-SO-FIX** Top Slab / Soffit fix clip for TUF -Inc. washer and angle clip

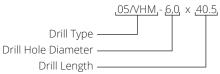
### Panel edge distance limitations





Equitone Panel	Panel Thickness (mm)	Drill Depth (mm)	TUF-S anchor	Drill Bit
[tectiva]	8	5.5	04/TUF-S-6x09-A4	05/VHM-6,0x40.5
[lines]	8	5.5	04/TUF-S-6x09-A4	05/VHM-6,0x40.5
[lunara]	10	5.5	04/TUF-S-6x09-A4	05/VHM-6,0x40.5
[materia]	8	5.5	04/TUF-S-6x09-A4	05/VHM-6,0x40.5
	12	8.5	04/TUF-S-6x12-A4	05/VHM-6,0x43.5
[patura]	8	5.5	04/TUF-S-6x09-A4	05/VHM-6,0x40.5
[natura]	12	8.5	04/TUF-S-6x12-A4	05/VHM-6,0x43.5
[pictura]	8	5.5	04/TUF-S-6x09-A4	05/VHM-6,0x40.5
	12	8.5	04/TUF-S-6x12-A4	05/VHM-6,0x43.5



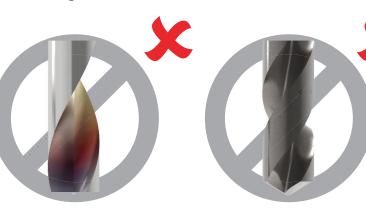


### Drill Bit

Prior to drilling Equitone panel, check the following:



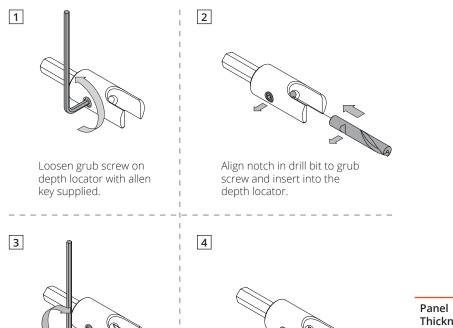
Use only the prescribed SFS VHM blind-hole drill bit according to the depth of the anchor / panel thickness.

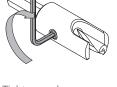


Check for signs of wear. Do not use a worn-out drill bit. Life expectancy for SFS VHM drill bits is approximately 500 holes Do not use a drill bit with a point angle. Anchor will not set into the depth required

### Depth Locator

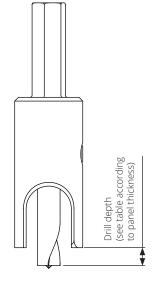
### Assembly





Tighten grub screw on depth locator with allen key supplied.

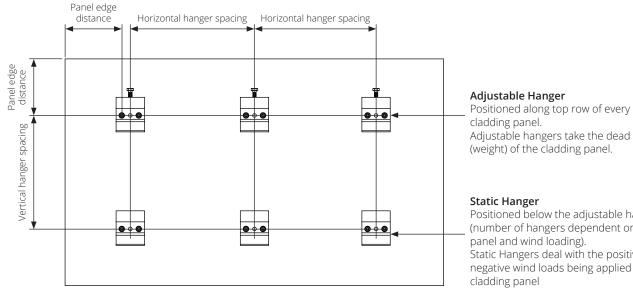
Depth locator with VHM drill bit assembled and ready to use.



Panel Thickness	Drill Depth	Tolerance		Drill Bit	
(mm)	(mm)	Min	Max		
8	5.5	5.5	6.0	05/VHM-6,0x40.5	
10	5.5	5.5	6.0	05/VHM-6,0x40.5	
12	8.5	8.5	9.0	05/VHM-6,0x43.5	



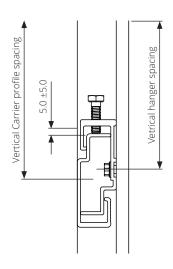
Every 100 holes check the accuracy of the depth locator as wear and tear causes the reference dimension to increase.



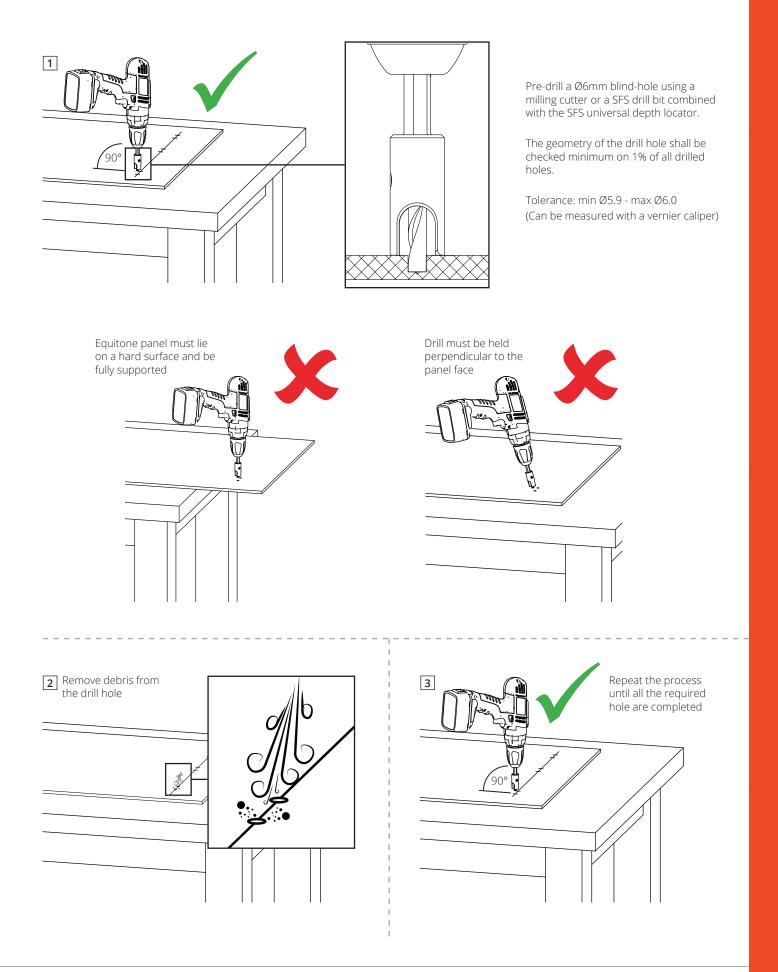
Adjustable hangers take the dead load (weight) of the cladding panel.

Positioned below the adjustable hangers (number of hangers dependent on size of panel and wind loading). Static Hangers deal with the positive and negative wind loads being applied to the

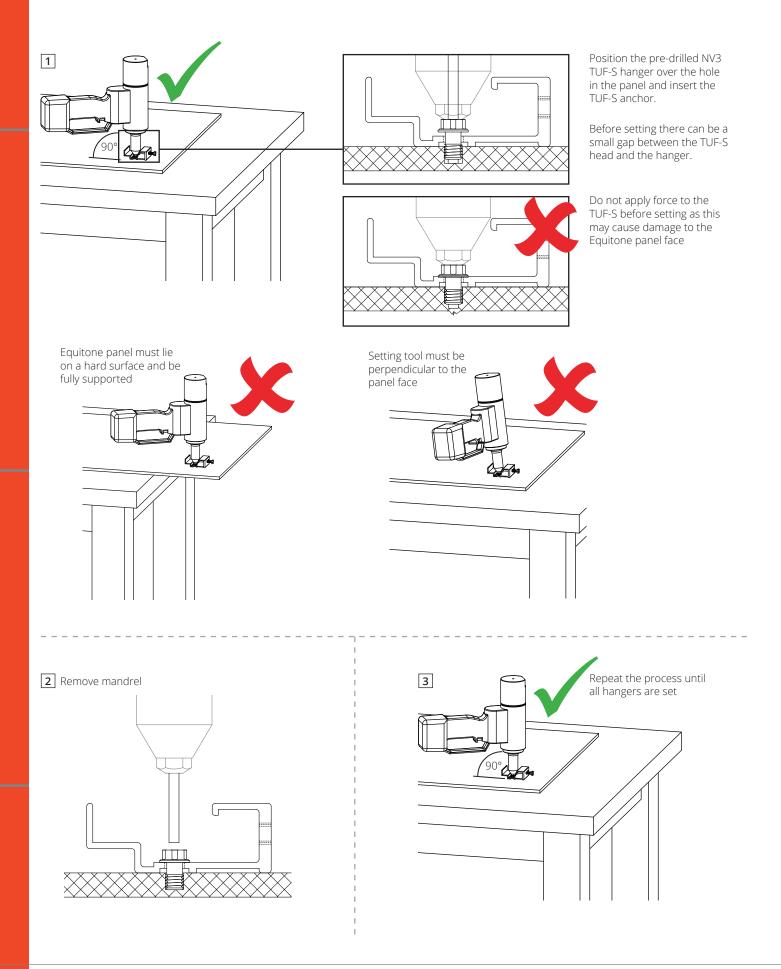
### Hanger Setting

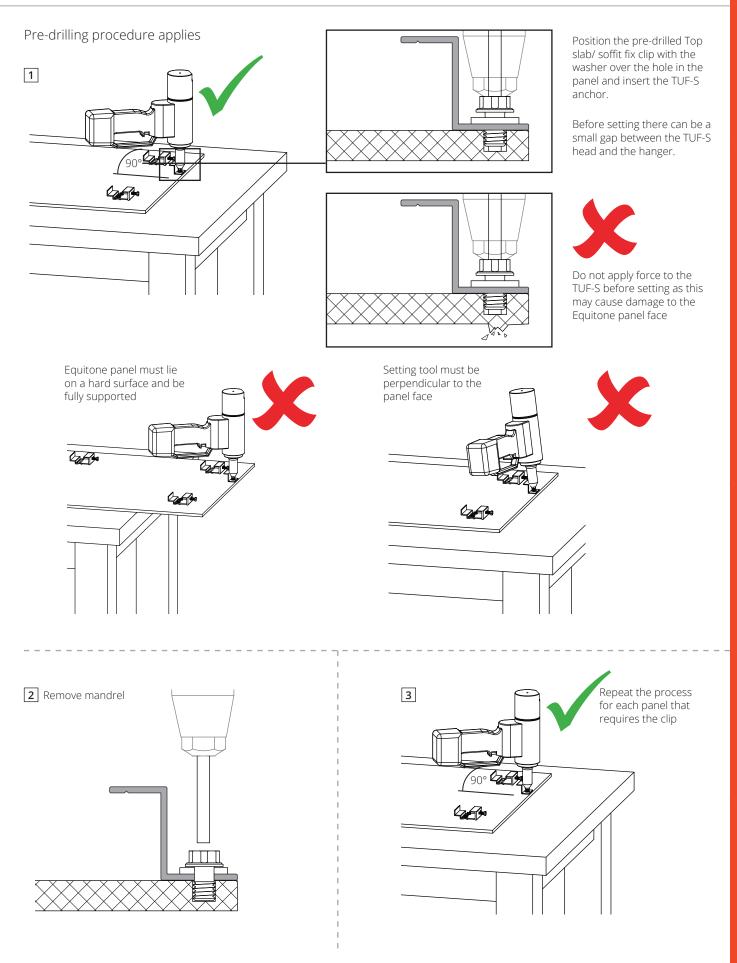


Initial setting of the panel is 5mm from the NV3 carrier profile. Allows for adjustability of ±5mm

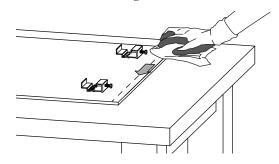




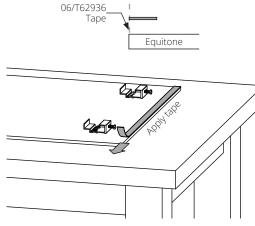




The surface should be free of dust, grease, oil, moisture, and 1 other contaminants as they will significantly decrease the level of bonding. To correctly clean the surface, you can use the tesa® industry cleaner or appropriate solvents such as ethanol or isopropanol together with a lint-free cloth. Please always test the surface before using solvent

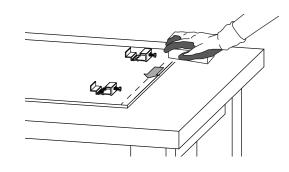


Apply 18 x 1.6 double sided foam tape to the Equitone panel 3 as soon as possible after cleaning to avoid contaminants. Apply pressure to avoid air bubbles under the tape.

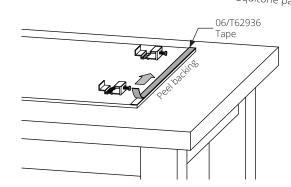


Due to immediate bonding, repositioning the tape is not recommended. Removing the tape from the part is only possible shortly after tape has been applied. Once removed, it cannot be used again and should be discarded.

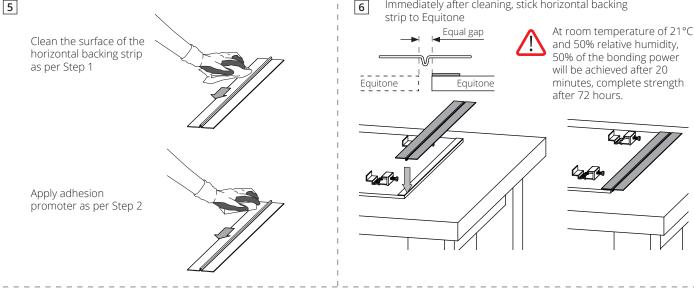
To increase adhesion of the tape, we recommend using the tesa® 2 adhesion promoter 60150 or 60153 with Equitone panels. Shake well before opening. Apply a thin coating of adhesive promoter, using a clean cloth or small brush. Depending on temperature or humidity, this will take between 30sec to 5 minutes.



- Cut horizontal backing strip to the width of the Equitone. 4 Remove backing prior to applying to horizontal express joint backing trim)
  - Cut horizontal backing strip to the width of the Equitone panel

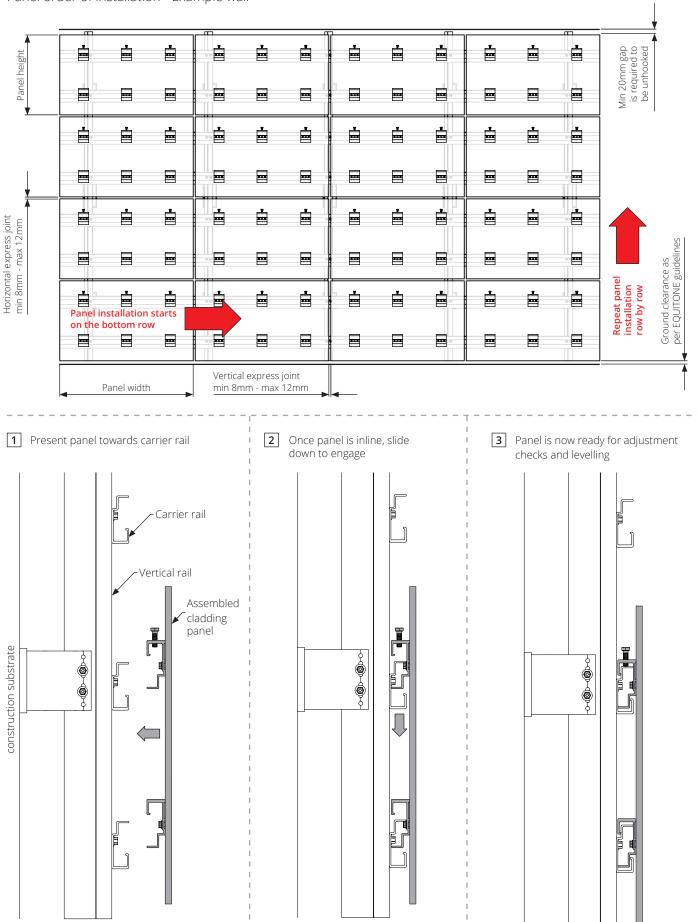


Immediately after cleaning, stick horizontal backing 6



The application of tesa® products must be strict accordance with their application guidelines and recommendations. Refer to tesa® application guides for the correct application of tesa® 62936, 60150 and 60153.

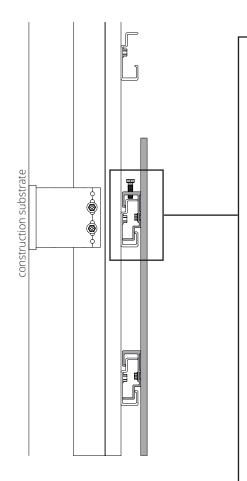
Panel order of installation - Example wall

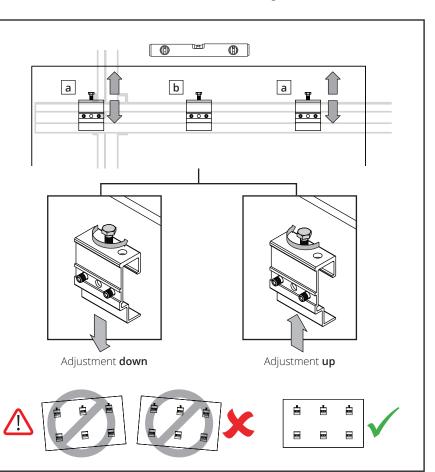


### Nvelope NV3 | SFS TUx-S | Hanging Panels | Open express joints

4 Panel Adjustment

- **a** Start with adjusting the two outer hangers first.
- **b** Once outer hangers are adjusted and level, adjust the remaining centre hangers to the same level

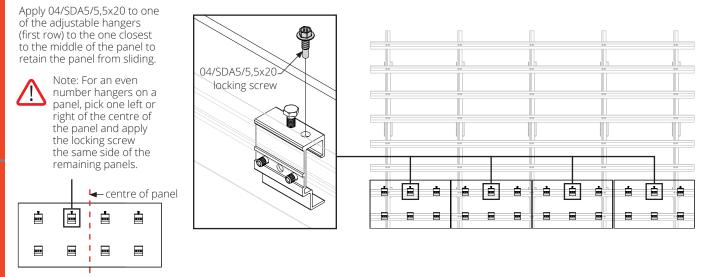




Repeat steps 1 - 4 before fixing the panel for the panels on the same row

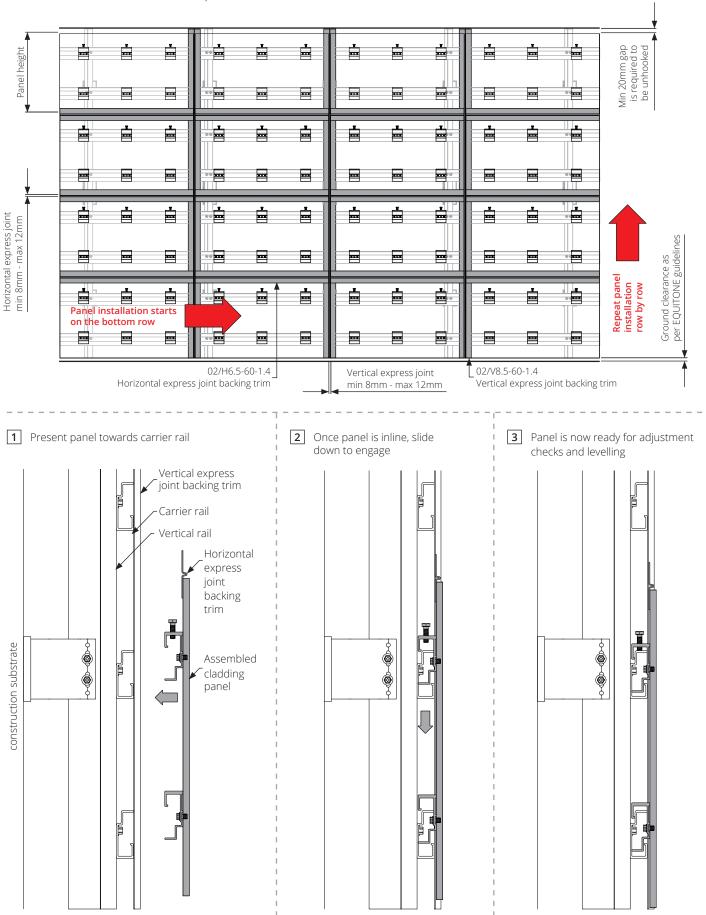
### 5 Panel fixing - Option 1

This panel fixing method is used where individual panel removability is not required and there is access to apply the 04/SDA5/5,5x20 locking screw after the installation of the panel. For other panel fixing options, please refer to pages 29 and 30



# Repeat steps for the remaining rows of panels

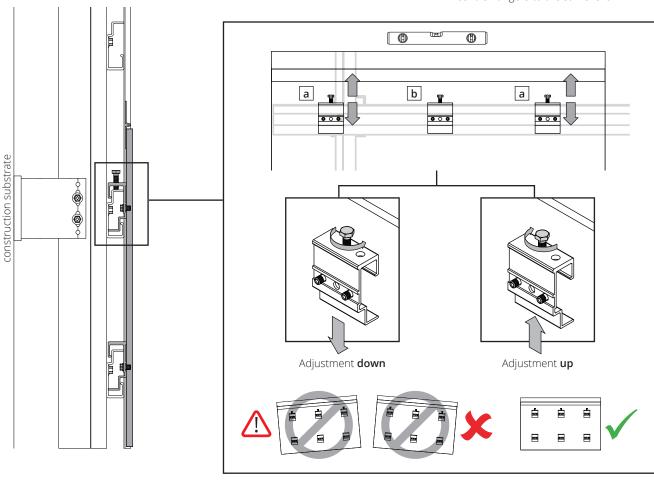
Panel order of installation - Example wall



### Nvelope NV3 | SFS TUx-S | Hanging Panels | Closed express joints

### 4 Panel Adjustment

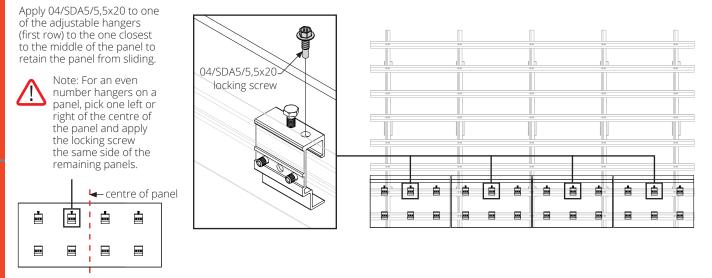
- **a** Start with adjusting the two outer hangers first.
- **b** Once outer hangers are adjusted and level, adjust the remaining centre hangers to the same level



### Repeat steps 1 - 4 before fixing the panel for the panels on the same row

### 5 Panel fixing - Option 1

This panel fixing method is used where individual panel removability is not required and there is access to apply the 04/SDA5/5,5x20 locking screw after the installation of the panel. For other panel fixing options, please refer to pages 29 and 30

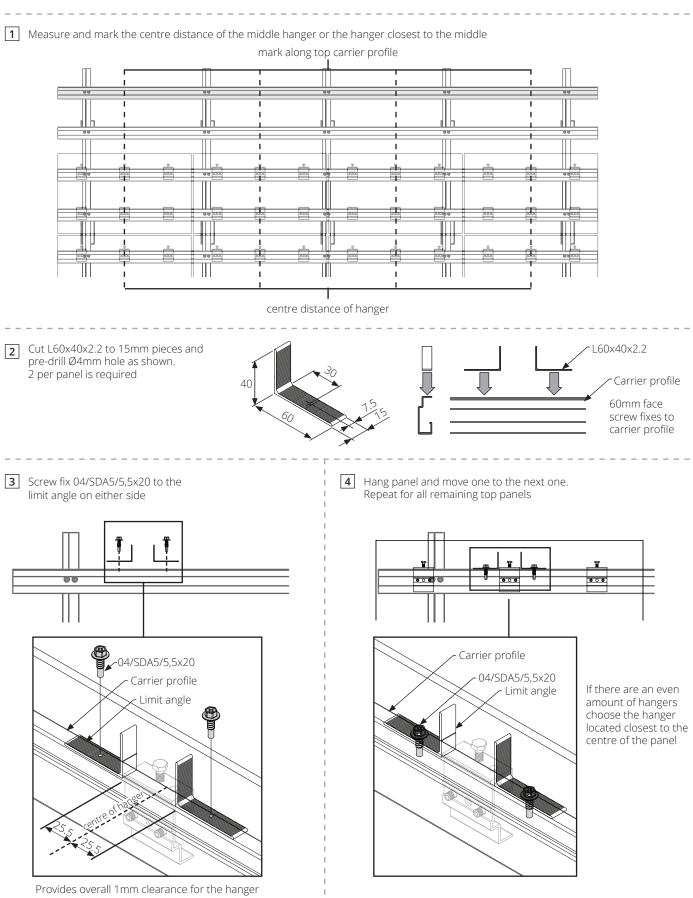


# Repeat steps for the remaining rows of panels

### Nvelope NV3 | SFS TUx-S | Hanging Panels

### Panel fixing - Option 2

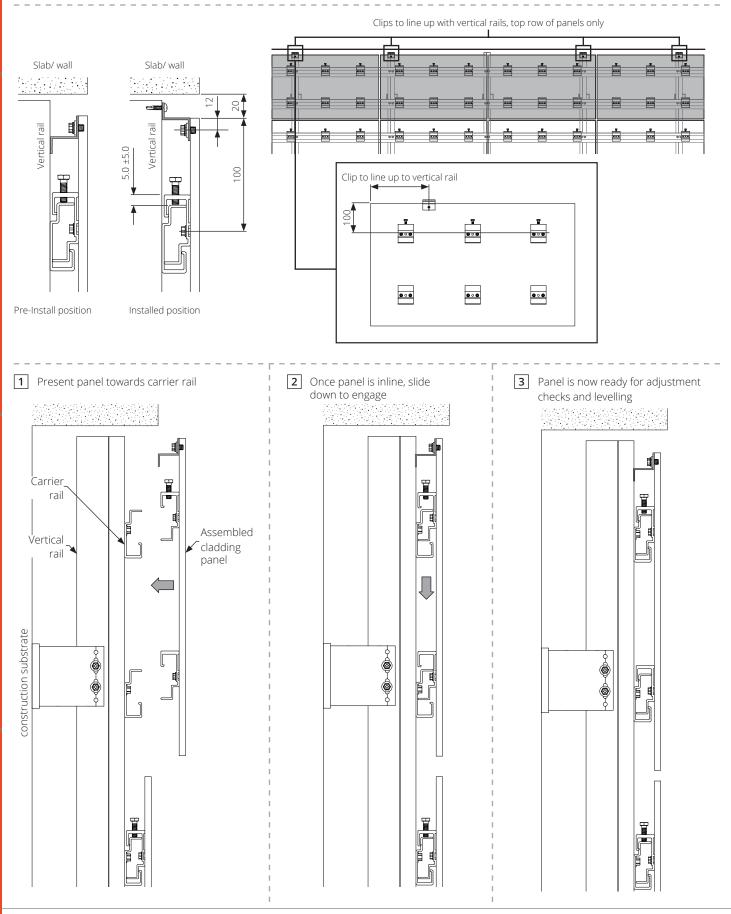
This panel fixing method is used where individual panel removability is required or where the application of Option 1 is not possible, for example where the panel interfaces a slab and there is no access to apply a locking screw after panel installation

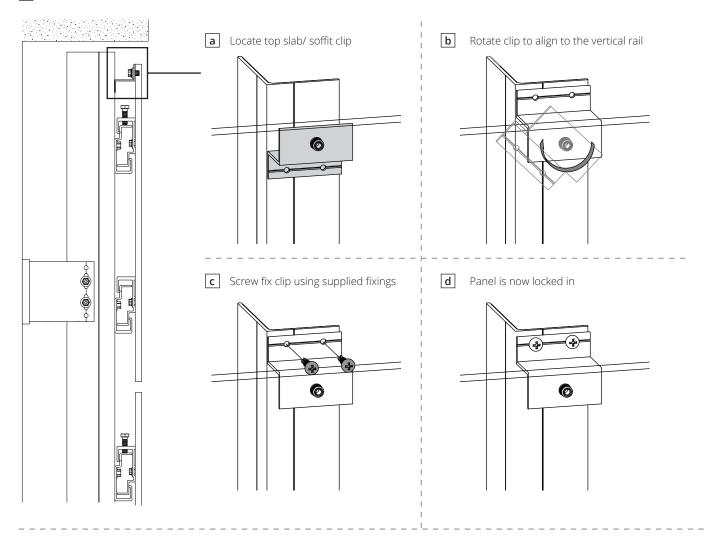


### Nvelope NV3 | SFS TUx-S | Hanging Panels

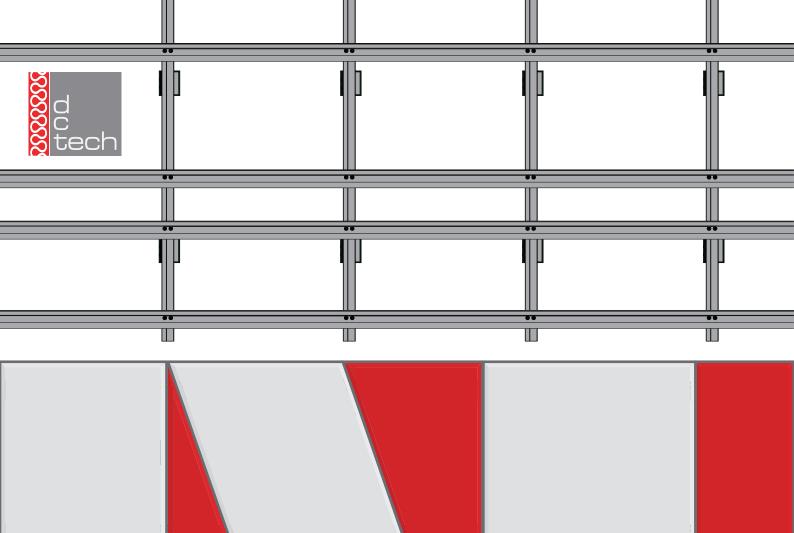
### Panel fixing - Option 3

This panel fixing method is used mostly in soffit / ceiling applications where either access to apply the locking screw will be tight after panel installation or individual panel removability is required.





### 4 Adjust panel before proceeding with these steps



# **Dynamic Composite Technologies**

Factory 1, 9-11 Butterfield St Blacktown, NSW, 2148 www.dctech.com.au (02) 8788 9555



