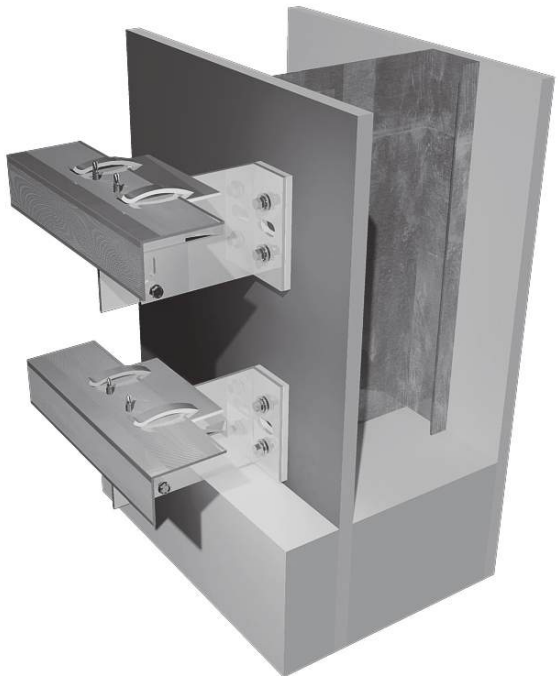
TECHNICAL GUIDE

DCS032 HORIZONTAL SYSTEM

DOWNER®
ORIGINAL HELPING HAND SYSTEM

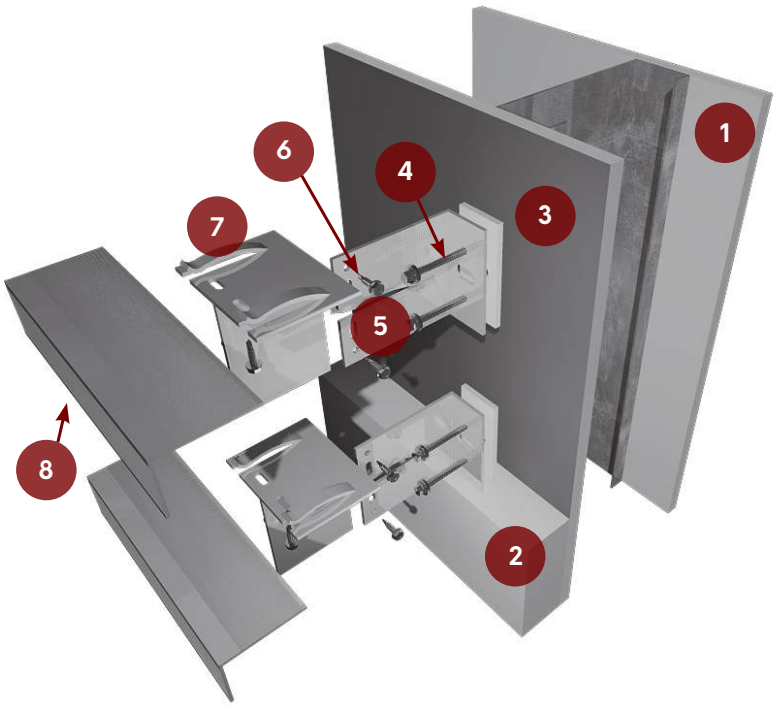


DCS032 SYSTEM OVERVIEW

Downer DCS032 framing system is designed to provide horizontal support to cladding panels using the principle of a ventilated façade.

Downer DCS032 Horizontal Adaptor combined with DCS031 HELPING HAND® brackets and extruded aluminium L & T profiles provide the installer with an adjustable system allowing for thermal and structural movement and variation in cavity depth to suit project specific requirements.

COMPONENTS



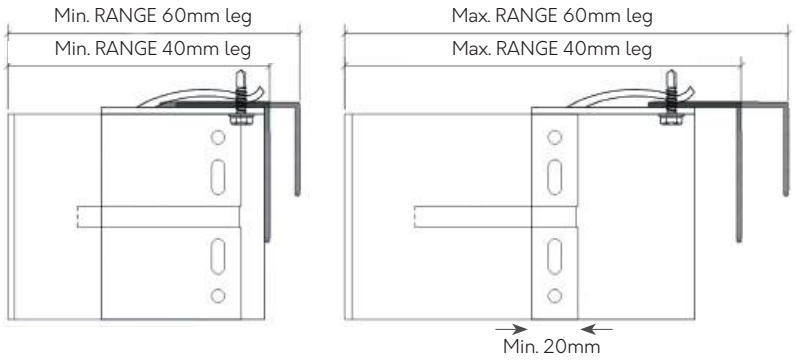
1. Primary Structure (Concrete, Masonry, SFS or Timber)
2. Insulation
3. DCS031 Isolator Pad
4. Primary Fixing (varies dependent on Primary Structure)
5. DCS031 Single HELPING HAND® Bracket
6. FDS 4.8x19mm
7. DCS032 Horizontal Adaptor
8. DCS031 “L” or “T” rails

DCS031 HELPING HAND® brackets are available as standard with Ø6.5mm holes (SFS/Timber) and 22xØ11mm slots (masonry/concrete) to suit project specific primary anchors.

Note: All illustrations included in the brochure are representations of the system and structural design analysis must be sought on a project basis. Technical guide to be read in conjunction with typical CAD details and, if applicable, with technical guide relevant to other Downer systems.

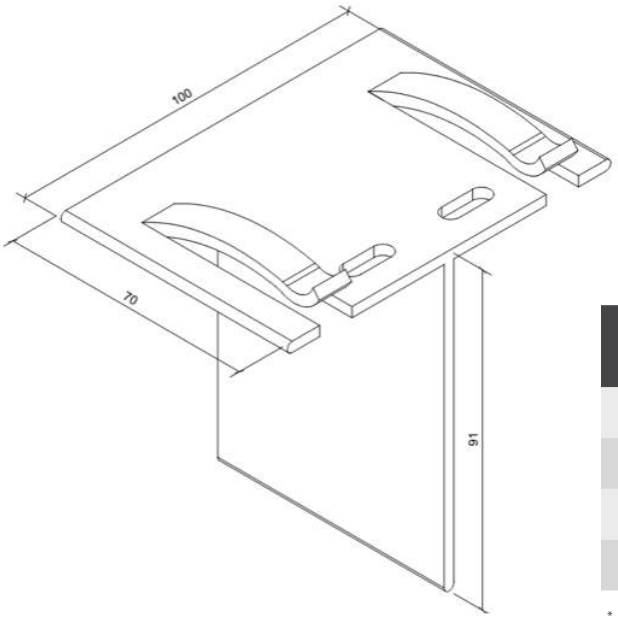
CAVITY RANGE

Downer DCS031 HELPING HAND® brackets are available in different sizes ranging from 40 to 400mm projection offering the following cavity ranges when combined with DCS032 Horizontal Adaptor.



Framing Zone - Range (R)					
Bracket Ref. Single	Bracket Ref. Double	Range- 40mm Leg into DCS032 Adaptor		Range- 60mm Leg into DCS032 Adaptor	
HH-Single 40	N/A	81mm	110mm	99mm	130mm
HH-Single 45	N/A	86mm	115mm	104mm	135mm
HH-Single 50	N/A	91mm	120mm	109mm	140mm
HH-Single 60	N/A	101mm	130mm	119mm	150mm
HH-Single 70	HH-Double 70	111mm	140mm	129mm	160mm
HH-Single 100	HH-Double 100	112mm	170mm	125mm	190mm
HH-Single 130	HH-Double 130	142mm	200mm	155mm	220mm
HH-Single 160	HH-Double160	172mm	230mm	185mm	250mm
HH-Single 190	HH-Double 190	202mm	260mm	215mm	280mm
HH-Single 220	HH-Double 220	232mm	290mm	255mm	310mm
HH-Single 250	HH-Double 250	262mm	320mm	275mm	340mm
HH-Single 280	HH-Double 280	292mm	350mm	305mm	370mm
N/A	HH-Double 310	322mm	380mm	335mm	400mm
N/A	HH-Double 340	352mm	410mm	365mm	430mm
N/A	HH-Double 370	482mm	440mm	395mm	460mm
N/A	HH-Double 400	412mm	470mm	425mm	490mm
Add 5mm to include Thermostop Pad / Add 7mm to include A2 IsoPad					

DCS032 ADAPTOR



Extruded Alloy Grade 6063 T6	
DCS032 Ref.	**Description**
DCS032	Horizontal Adaptor

DCS031 Rail Ref.	Description	Length (mm)
T100/60	“T” carrier rail	3000/4850/6000
T125/60	“T” carrier rail	3000/6000
T140/60	“T” carrier rail	3000/6000
L60/40	“L” carrier rail	3000/4850/6000

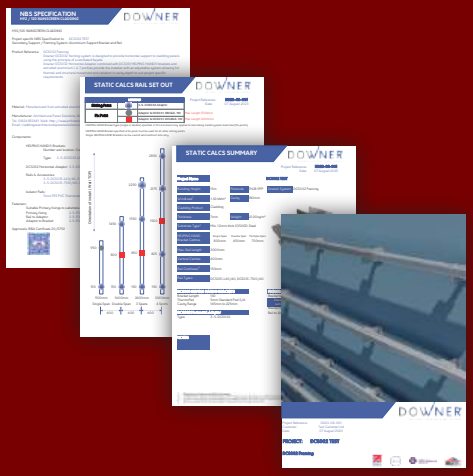
* Special order, minimum quantity applies.

SITE CHECKLIST

Before commencing installation of DCS032 framing system please make sure you have received the following information:

- Project specific static calculations from your Downer Designer portal. Or get in touch with the team direct - info@downerdesigner.com. These will dictate maximum vertical HELPING HAND® bracket centres, location of fixed and sliding point brackets and size / type of primary fixing based on project specific dynamic and dead loads.
- DCS032 horizontal adaptor, DCS031 HELPING HAND® brackets and rails set out drawings showing location of fixed point, sliding points and rails spacing.

Get project specific stats direct via Downer Designer - your dedicated portal.



Just provide us with your project info and we’ll prepare your optimised project pack.

Scan here to access your Design Designer portal

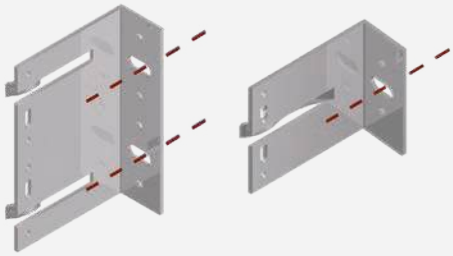
HELPING HAND BRACKETS

SUBSTRATES

All our DCS031 HELPING HAND® brackets are available with both Ø6.5mm holes and 22xØ11mm slots to suit primary anchors specified by project specific static calculations and/or on-site pull out tests.

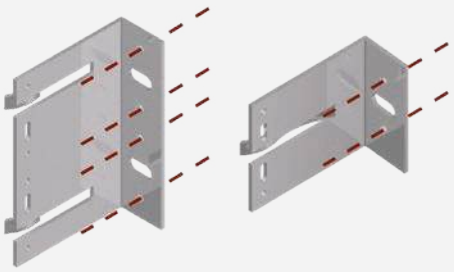
Concrete or masonry substrates

Ensure fixings are fitted through the 22xØ11mm slots. 2no. per double and 1no. per single bracket.



Steel or timber substrates

Ensure fixings are fitted through the Ø6.5mm holes. 4no. per double and 2no. per single bracket.

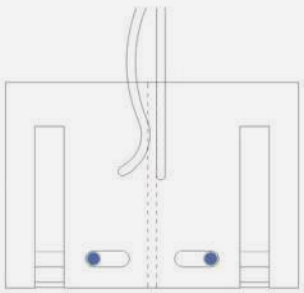


FIX & SLIDING POINTS

DCS032 Adaptor is supplied with 2no. 15xØ5.5mm slots.

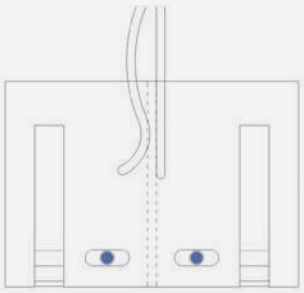
Fix point (Absorbs dead load)

Horizontal rail secured using 4.8x19mm framing drills screws at opposite side of 15xØ5.5mm slots.



Sliding point (Absorbs live loads and rail expansion)

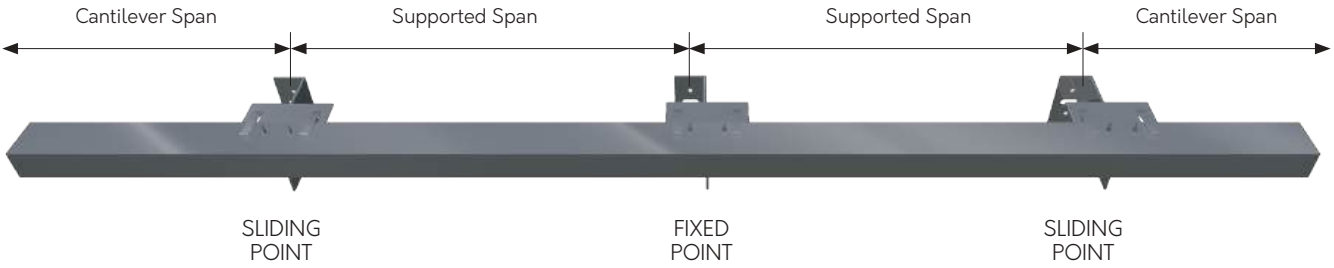
Horizontal rail secured using 4.8x19mm framing drills screws centred in 15xØ5.5mm slots.



Please refer to project specific static calculations for correct location of fix & sliding point brackets and quantity of each.

DCS032 Adaptor must be fixed to DCS031 HELPING HAND brackets through 2no. 5.1mm holes.

TYPICAL RAIL SET OUT



DESIGN CONSIDERATIONS

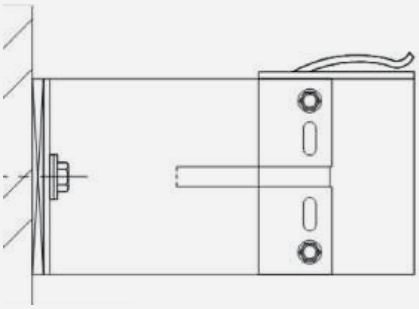
Rails and HELPING HAND® brackets should be set out in accordance with the structural engineer's calculations or necessary building regulation.

Typically, rails are installed in lengths to suit panel width module. T rail sections generally provide support at panel joints and L rail sections provide support for intermediate fixing.

Rainscreen cladding fixings should be positioned close to the centre line of the front face of the L rail, note the orientation of the bracket/rail leg.

There must be a minimum 10mm gap between the ends of adjacent rails to allow for expansion and cladding panels should never be fixed to two adjacent rails across the expansion gap.

Cladding panels must not span across and be fixed to the other side of a stud wall floor deflection head. Rails must not span across and be fixed to the other side of a vertical expansion joint unless the DCS032 Horizontal Adaptor installed on the other side of the expansion joint has been specially adapted with elongated slots to accommodate the specified expansion tolerance.



DCS032 Horizontal Adaptor must always be fitted to the DCS031 HELPING HAND® brackets through the holes, not through the slots.

For ease of lining and levelling rails start from a predetermined datum line corner/opening or return.

DCS031 HELPING HAND® bracket isolator pads must be used when there is risk of bimetallic corrosion or thermal bridging.

Fix point DCS032 Adaptor distance to either rail end should not be greater than 3m.

Horizontal systems might require an increased air gap to ensure that ventilation do not get compromised by horizontal rails.

INSTALLATION PROCEDURE

1. Mark-up location of HELPING HAND® brackets ensuring that single and double HELPING HAND® brackets are positioned correctly for the fixed and sliding points. Check for line and level and note the orientation of the bracket projected leg.

2. Install HELPING HAND® brackets with isolator pads positioned between the rear of the brackets and the building substrate. Use the appropriate primary anchors as dictated by project specific static calculations.

   All our brackets are supplied with both Ø6.5mm holes (SFS / Timber) and 22xØ11mm slots (masonry / concrete) to suit project specific primary anchors.

3. If insulation is to be fitted prior to rail installation, ensure that once it is in place access is available to attach the DCS032 Horizontal Adaptor to the HELPING HAND® brackets.

4. Insert DCS032 Horizontal Adaptor into the HELPING HAND® brackets.

There should always be a minimum of 20mm of the Adaptor leg inserted into the HELPING HAND® bracket.

5. Check the inserted depth and face alignment before fixing the adaptor using the S/S 4.8mm x 19mm TEK screws through the holes in the DCS031 HELPING HAND® brackets (NOT THROUGH SLOTS).

6. Insert the horizontal “L” or “T” rails into the DCS032 Adaptor to the required cavity depth. Check the setting out and face alignment with a laser level or string line.

Note: If leaving the HELPING HAND© grid overnight and partially constructed ensure the rails are secured with temporary fixing screws.

7. Using the S/S 4.8mm x 19mm TEK screws fix the horizontal rails to the DCS032 Horizontal Adaptor through the pre punched screw slots. Ensure that the TEK screws are fitted in the correct positions for the fixed and sliding points, and from the under face of the Horizontal Adaptor.

Safety note: sharp drill point of the TEK screw will be exposed. Please ensure the installation team takes special care when installing the cladding panels or while working near the frame. Alternatively, sharp drill point can be removed using cutting pliers.

8. Proceed with the installation of the remainder of the rainscreen framing system.

9. When completed and before commencing cladding panel installation, final checks should be carried out on:
   a. Level and plumb of horizontal rails
   b. Correct location of fix and sliding point DCS032 Horizontal Adaptor
   c. DCS032 Horizontal Adaptor fixed through DCS031 HELPING HAND® bracket holes
   d. Correct torque load applied to primary anchors as recommended by fixing manufacturer

10. Proceed with cladding panel installation following cladding manufacturer guidelines.

DELIVERY AND PACKAGING

Most deliveries are made by standard courier unless specific vehicles are requested (For 6m lengths a rigid sided or larger lorry may be required).

All products leaving our factory are packed in a manner to ensure safe delivery to site. This entails protection by shrink-wrapping and strapping, and with delivery on suitably sized pallets, frames, crates, bundles, or boxes. These normally contain a maximum of 1200kg for pallets and 35kg for non-palletized items for safe handling on site. It should be noted that it is the customer's responsibility to ensure safe unloading of delivery vehicles.

Pallets are made suitable for forklift off-load only as standard. If pallets are required for craning off-load, maximum loading and size must be advised at the time of ordering.

SITE HANDLING

Components must be handled with care in order to avoid loss or damage. Should it be necessary to store the material on site for any length of time, it should be protected from the elements and the environment. A suitable storage area will need to be set aside, storage should be as near as practicable to the areas of working to minimise handling, damage, and waste.

MAINTENANCE INSTRUCTIONS

Aluminium profiles and façade accessories subjected to normal circumstances and proper cleaning and maintenance, are guaranteed a long-life span in excess of 35 years.

Contamination by concrete, mortar, cement and such, is extremely harmful and needs to be rinsed immediately with pure water.

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For project specific samples and technical assistance please contact our technical department on claddings@architecturalpanelsolutions.com

All information is correct as of the date of this document created August 2023.