



**TITAN**

**HV Panel System**

# **Method statement**

# Method statement HV Panel System

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## Introduction

Ischebeck Titan is renowned as one of the leading manufacturers and suppliers of equipment to the construction and civil engineering industries.

Our commitment to safety and site efficiency is evident in the design performance and quality of our products, which offer safe access and secure working platforms for an enormous variety of applications.

The enclosed method statement underlines our devotion to site safety by providing recommendations, based on tried and trusted methods, for the proper use and application of Ischebeck Titan's HV Panel system.

Please take time to read and understand the information presented before using the products covered. If you need further advice or assistance consult a suitably qualified person within your own company or contact Ischebeck Titan.

## Disclaimer

The methods presented in this document are solely for the use of Ischebeck Titan equipment and are intended for guidance only. When familiarity has been gained with the equipment preferred methods may be adopted, provided they do not contravene health and safety regulations or accepted safe working practices. The information is correct at time of publication, but Ischebeck Titan reserves the right to change, without prior notice, the specifications and methods mentioned. No responsibility whatsoever can be accepted for any errors or omissions in, or misrepresentation of, the contents. For specific information refer to Ischebeck Titan Limited.

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## Site safety is your responsibility

The importance of site safety cannot be over emphasized. You have a responsibility to yourself, your colleagues, site visitors, family, friends and others to ensure you do not injure yourself or take actions, which put the lives and health of other people at risk.

Site safety rules will form part of every site's health and safety plan. You should familiarise yourself with these rules and make sure that you and fellow workers do not contravene their requirements. A prominent notice will identify personnel with overall responsibility for site safety.

You will have contractual and legal obligation to follow these rules and adhere to relevant legislation, such as the Health and Safety at Work Act, which place specific responsibilities on you and your employer to prevent accidents.

Site safety is the responsibility of everyone on site. If you have a reason to believe that safety is being compromised, you should report it to the appropriate personnel.

## Your responsibilities

Following are a few suggestions to help you work safely and contribute to safety on your site:

- Make sure you fully understand the safe and proper way to do any job.
- If in doubt, ask your supervisor – do not guess.
- Always conduct yourself in a responsible and safe manner.
- Do not expose others to danger through your actions.
- Always use the correct tools and equipment for the job.
- Always use the appropriate safety equipment and protective clothing.
- Report ALL defects in plant and equipment.
- Observe and comply with warning and hazard notices.
- Advise newcomers of safe working practices.
- Make sure you know where to go for first aid treatment.
- Report any injury and ensure it is entered in the accident book.
- Never indulge in horseplay or practical jokes at work.
- Never attempt to work whilst under the influence of alcohol or drugs.
- Make sure you have read and understood the sites health and safety requirements.
- Report any situation which might compromise site safety to the sites safety officer.

## Safe working practice

- Consider health and safety first. If you are not sure of procedures ask.
- Do not take shortcuts – use the access provided.
- Do not remove handrails or ladders from scaffolds unless instructed to do so and replace them as soon as possible.
- Play your part in keeping the site tidy and safe.
- Look out for hazard warning notices and obey them.
- Never attempt to operate machinery unless you have been trained and authorized to do so.
- Attempting to lift heavy objects or materials can cause injury – obtain assistance where necessary.
- Study you company's policy.
- Remember you have a legal duty to take reasonable care of your own health and safety and to avoid placing other people at risk. Such as those who work with you and members of the public.
- If in doubt about your job, ask your immediate supervisor for guidance.
- Your co-operation in discouraging children from entering the site will help to reduce the risk of accidents to them and others.
- Remember that entering an unsafe area could render you liable to prosecution. If it looks or feels unsafe, report it. If you are unsure, ask site supervision for advice.

## Personal protective equipment

For your protection, always use the safety helmets, ear protectors, face masks, goggles, gloves, safety harness and other items of personal protective equipment appropriate to tasks you are undertaking.

When protective clothing and/or equipment is issued to you:-

- Wear or use the equipment when required and when there is any possibility of personal injury in the course of your work.
- Look after the equipment.
- If the equipment is on personal issue, store it carefully and ensure that it is available for use when needed.
- Make sure that equipment is properly maintained.
- Replace defective equipment immediately.
- If you have any doubts about the correct use, adjustment or maintenance of the equipment, ask your supervisor.

## Description

The Titan HV panel decking system provides a rapid, versatile and efficient means of casting in-situ concrete decks in a wide variety of applications.

Lightweight and easy to use, Titan HV comprises just 3 main components and can be erected and dismantled by a team of two operatives without the need for special tools, making it one of the least labour intensive systems on the market.

With all erection and dismantling undertaken from beneath the deck itself, Titan HV minimises requirements for working at height and makes a major contribution to site safety.

The system's modular nature simplifies the entire process, naturally creating a 1.8m grid that self-sets. This simplicity in use, combined with the system's drop-head, allows for early stripping and re-use of beams and panels, thus enhancing site productivity whilst maintaining automatic backpropping.

## Technical specification

### Primary beams

**1.15m, 1.50m, 1.70m, 3.50m** **2.30m**

Ixx	Moment of Inertia	559cm <sup>4</sup>	1027cm <sup>4</sup>
Zxx	Section Modulus	60.8cm <sup>3</sup>	94.5cm <sup>3</sup>
E.I.	Bending Stiffness	391kNm <sup>2</sup>	719kNm <sup>2</sup>
M	Resistance Moment	6.89kNm	10.8kNm
S	Allowable Shear Force	27kN	27kN

### Secondary beams

**1.15m, 1.50m, 1.70m**

Ixx	Moment of Inertia	175cm <sup>4</sup>
Zxx	Section Modulus	29cm <sup>3</sup>
E.I.	Bending Stiffness	122.5kNm <sup>2</sup>
M	Resistance Moment	3.3kNm
S	Allowable Shear Force	9.25kN

### Drophead

Safe Working Load 50kN

### Concrete Slab

Maximum allowable slab thickness = 0.4m

Concrete = 24.5kN/m<sup>3</sup>

Live Load + Impact = 1.8kN/m<sup>2</sup>

Maximum Leg Load 1.8m x 1.8m Grid = 37.58kN

See relevant prop loading graphs for permissible leg loads.

## Components

**Drophead** – Galvanised steel component that is bolted to the support prop by means of 2 No. speed thread bolts and nuts. The cam action mechanism of the drophead allows for 100mm strike distance for the removal of beams and panels.

**Primary Beams** – Lightweight high strength aluminium profile of durable construction for easy, fast and safe handling. Primary beams are located on to the support plate of the drophead.

**HV Panel** – Lightweight panel of aluminium construction with Iflon GRP decking panel. Panel size of 1.8m x 0.45m with a weight of 16.5kg, incorporating a quick release handle locator, allows for one man to safely erect and dismantle the panel from below. Panels are located into the support channels of the primary beams.

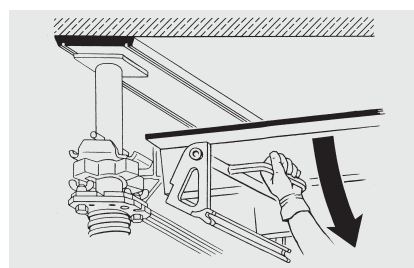
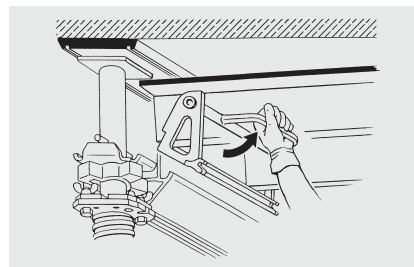
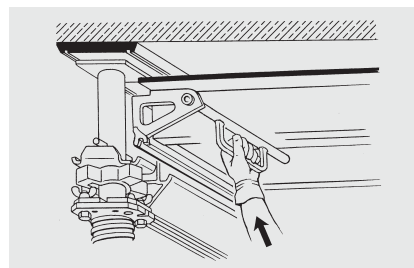
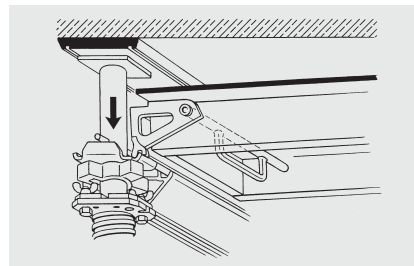
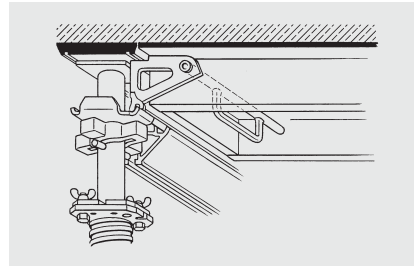
**Iflon Filler Strip** – Closes gap between panels over the primary beam.

**Secondary Beams** – Lightweight aluminium profiles that are used for infill areas around columns or for make up bays within the floor slab area. Beams are located into the support channel of the primary beam.

**Support Props** – System can be supported by either aluminium Titan HV Props or Titan Legs. Legs/props are stabilised by Titan ledger frames at predetermined intervals. Steel props can also be used for support.

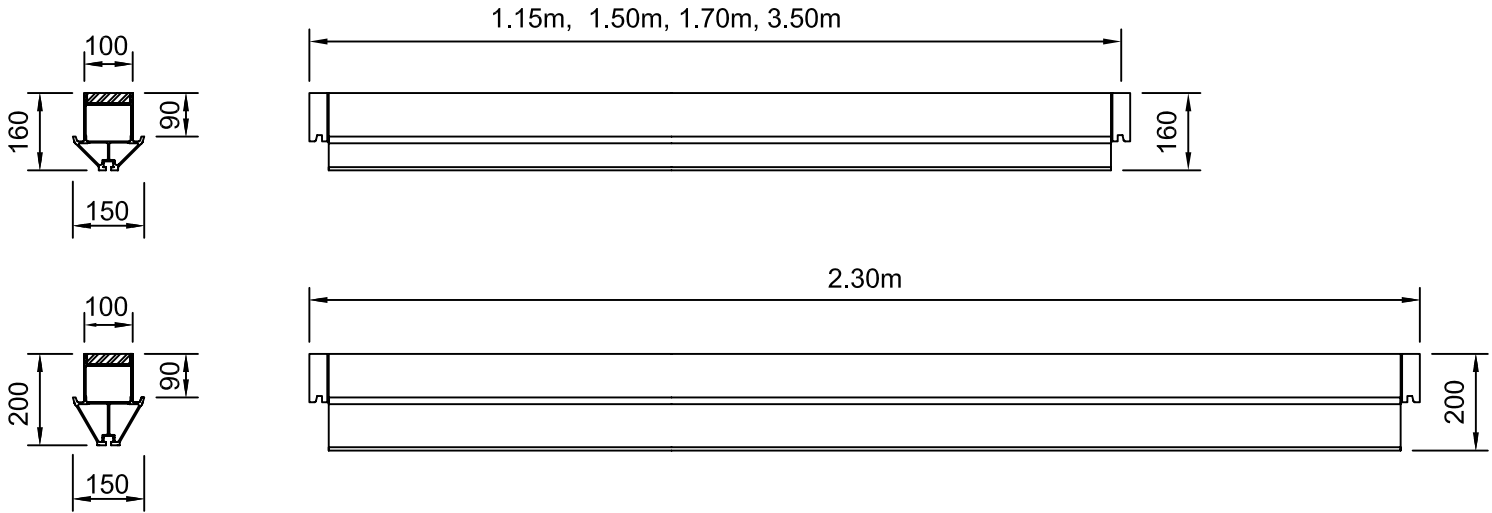
**Panel Storage Rack** – Used for the safe delivery and return of HV Panels. A maximum of 30 panels are stored in the rack giving an overall weight of 615kg.

**Safety Catch** - Used to secure Primary Beams when cantilevered beyond slab edge.



Quick release handle on one side of panel allows erection and stripping from beneath deck.

## HV beam details

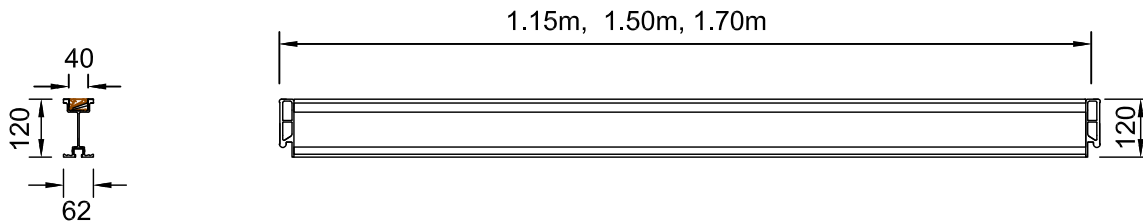


### Primary beams

length	weight	leg centers = length + 0.10m
1.15m	9.4kg	1.25m
1.50m	12.3kg	1.60m
1.70m	13.8kg	1.80m
2.30m	18.0kg	2.40m
3.50m	13.8kg	1.8m Max. *

### NOTE:

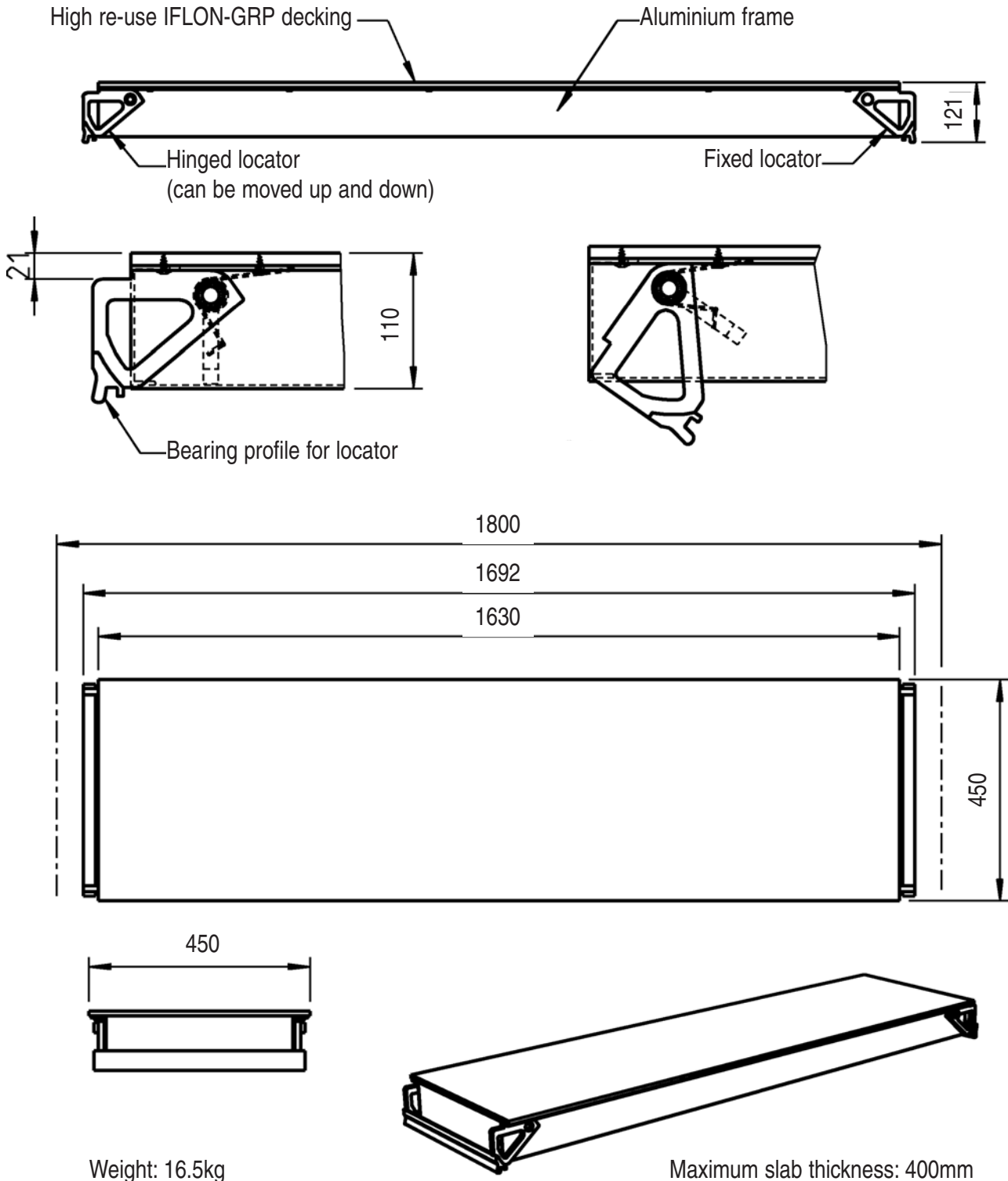
Maximum slab thickness supported by 2.30m Primary beam = 0.25m  
 \* 3.50m Primary beam requires intermediate support.  
 3.50m Primary beam used mainly to cantilever beyond slab edge to provide suitable access.



### Secondary beams

length	weight	leg centers = length + 0.10m
1.15m	3.5kg	1.25m
1.50m	5.5kg	1.60m
1.70m	6.2kg	1.80m

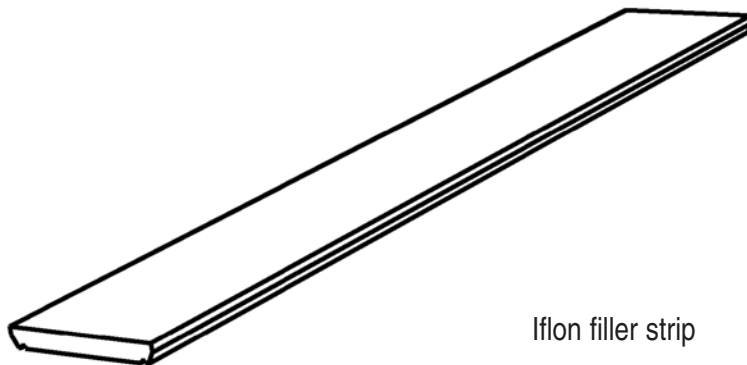
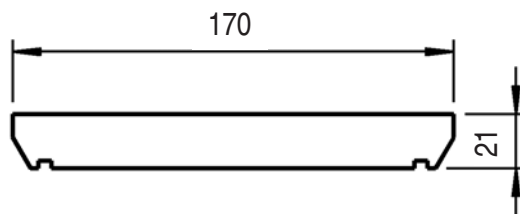
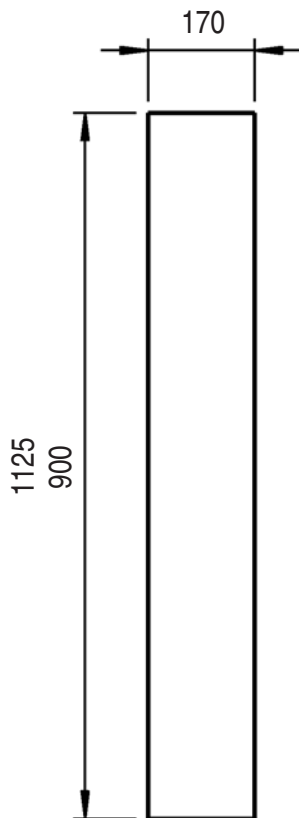
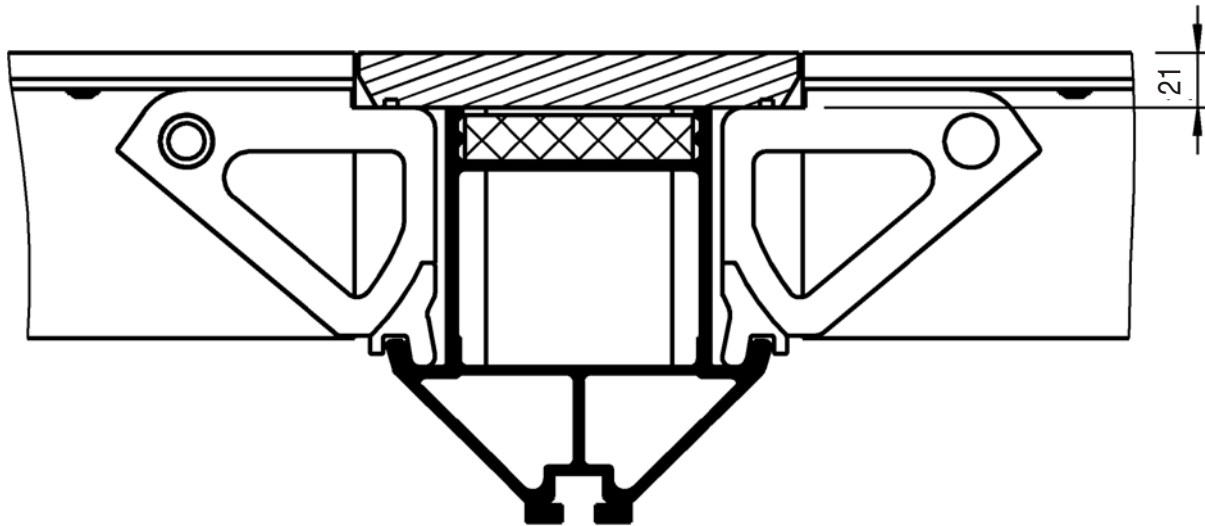
## Titan HV IFLON-GRP panel





## Iflon filler strip

The gap between the panels over the main beam is closed by a filler strip.

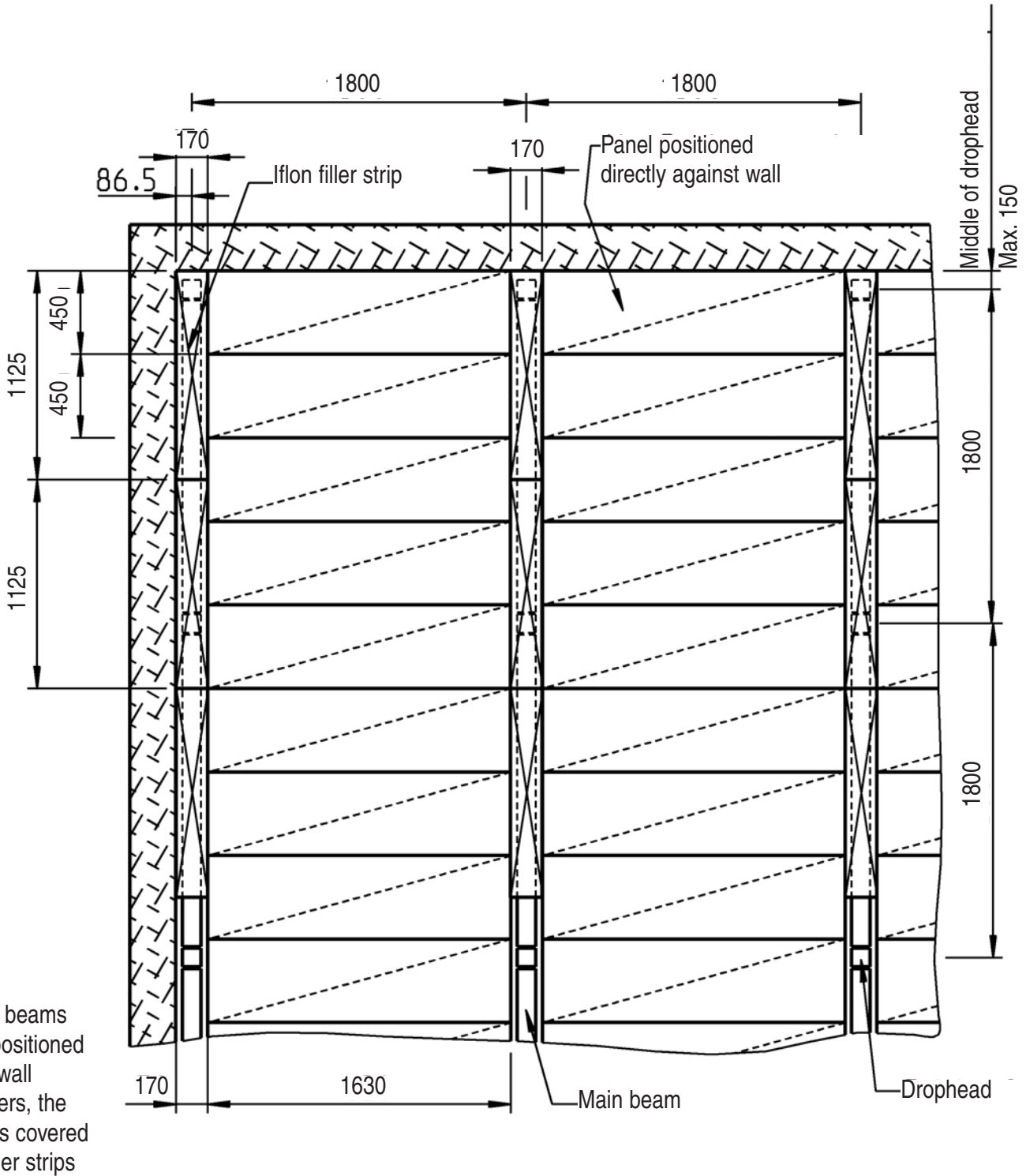


Iflon filler strip

Weight:  
1125mm = 3.80kg  
900mm = 3.04kg

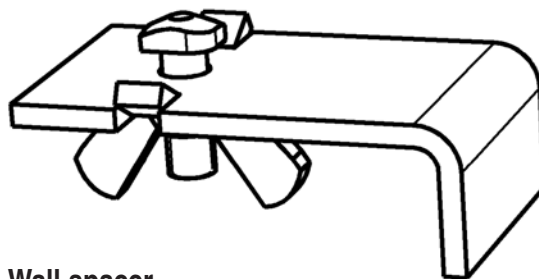
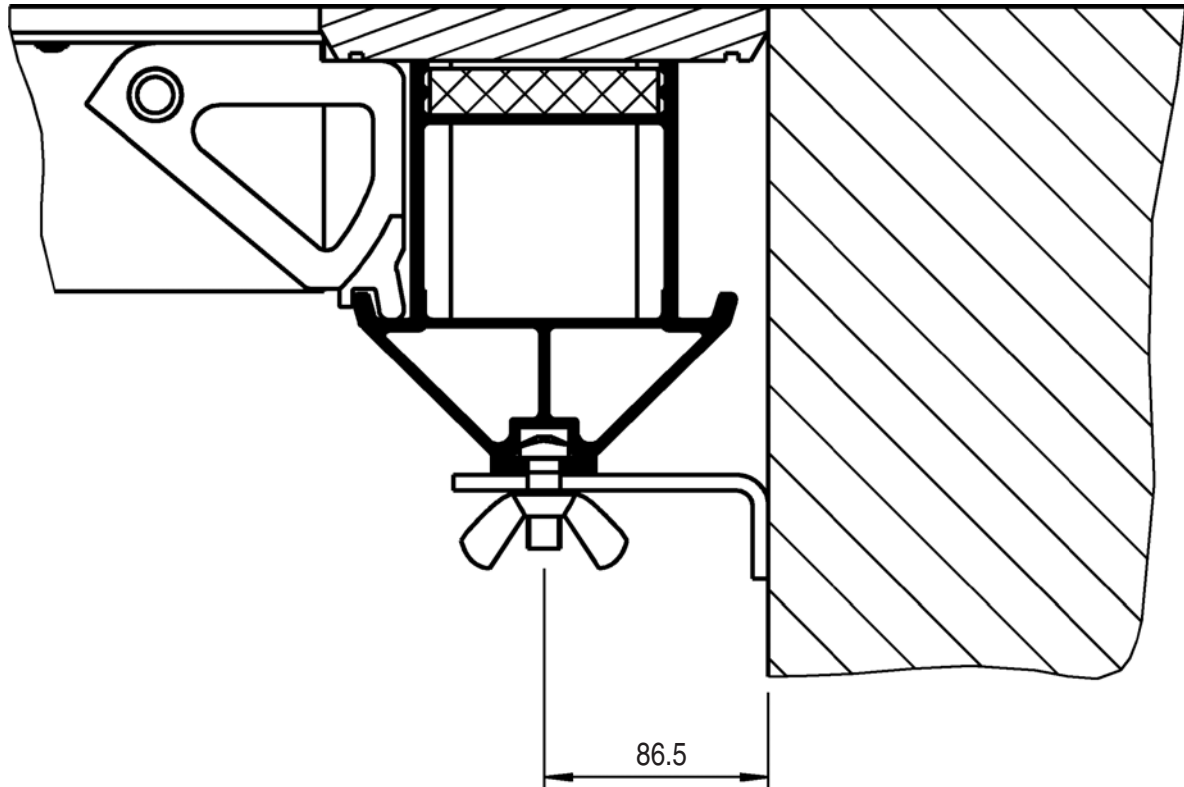
## Erection

System can be positioned directly against existing R.C. walls



## Wall positioning

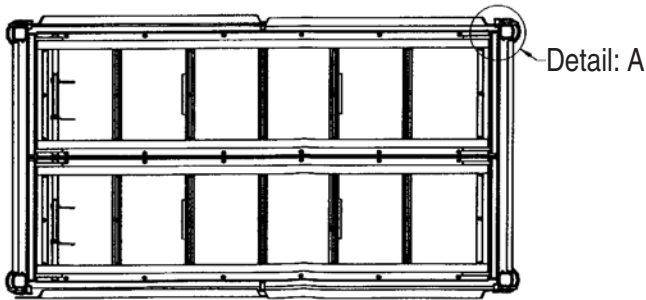
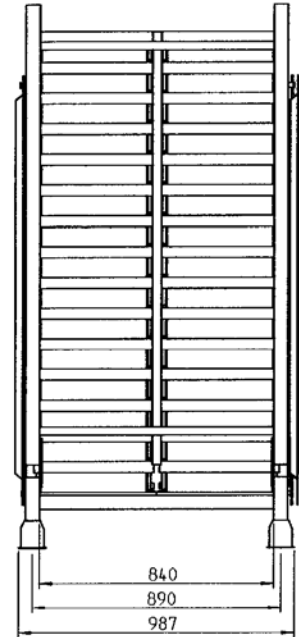
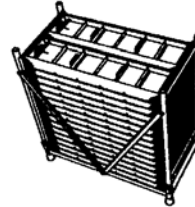
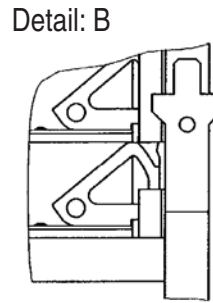
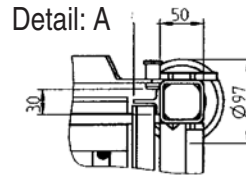
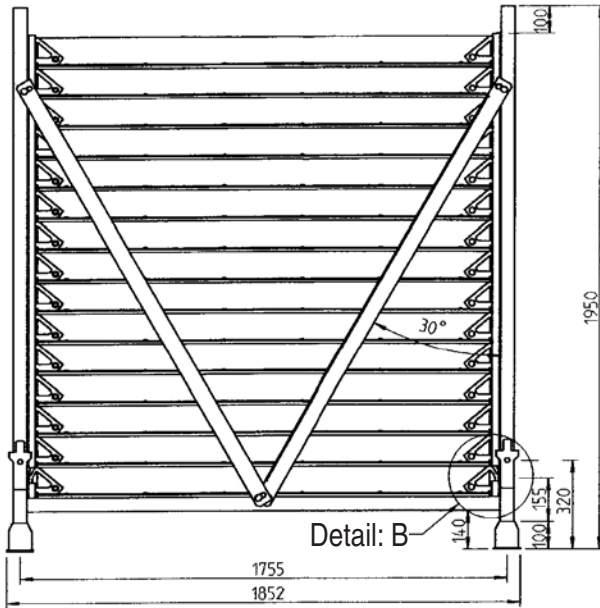
The gap between the panel and the wall can be closed with filler strips.  
The wall-spacers give the required distance to the wall.



Wall spacer

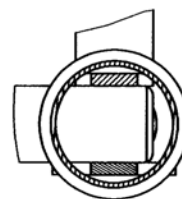
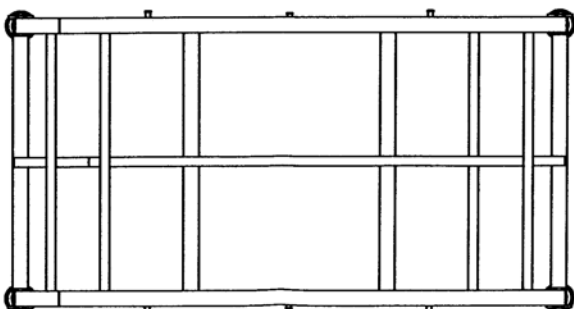
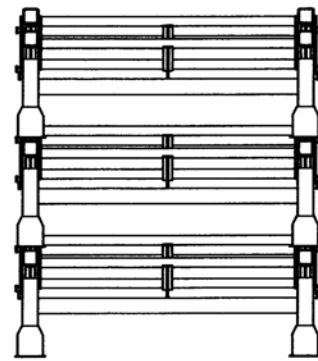
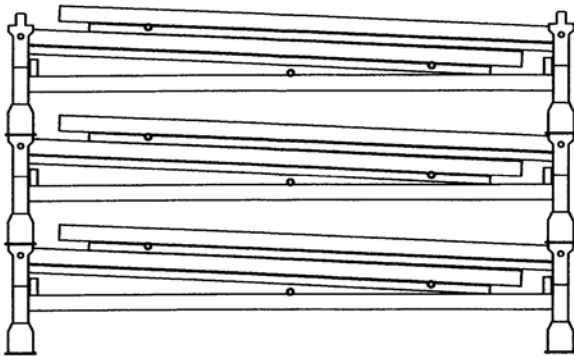
Weight: 0.60kg

## Panel storage rack (Collapsible)

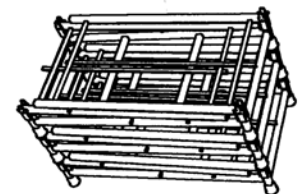


Weight: 134kg (excluding panels)

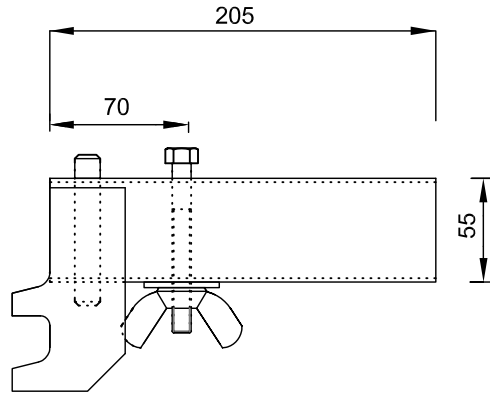
Once emptied storage racks can be collapsed and stored on top of each other.



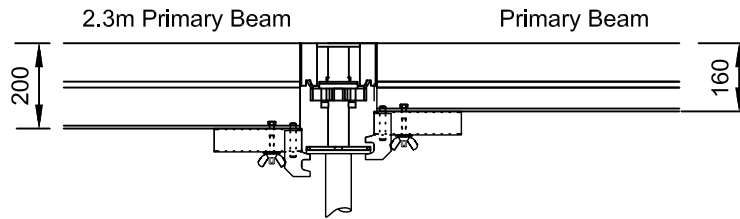
Hinged Joint



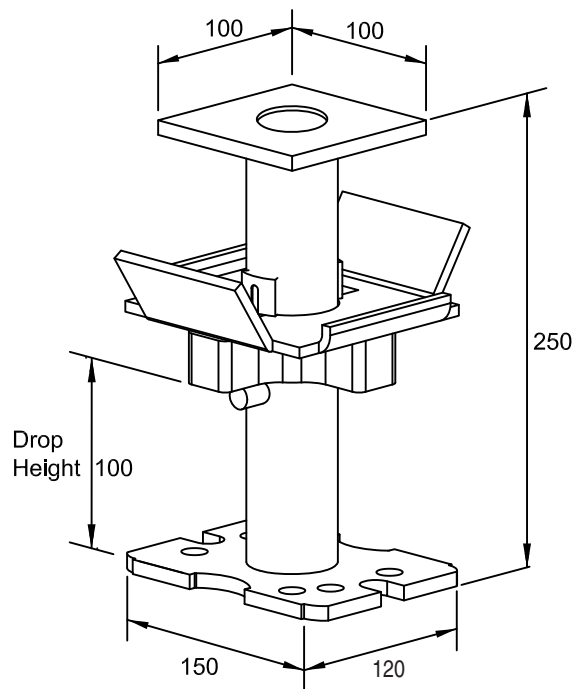
## HV drophead and safety catch



Safety catch  
Weight: 1.6kg



Safety catch prevents uplift in cantilevered beams

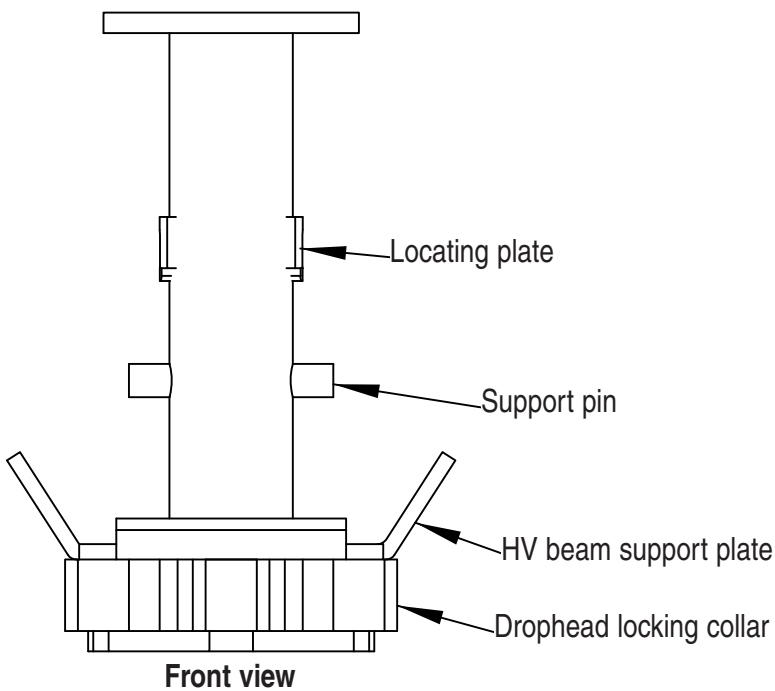
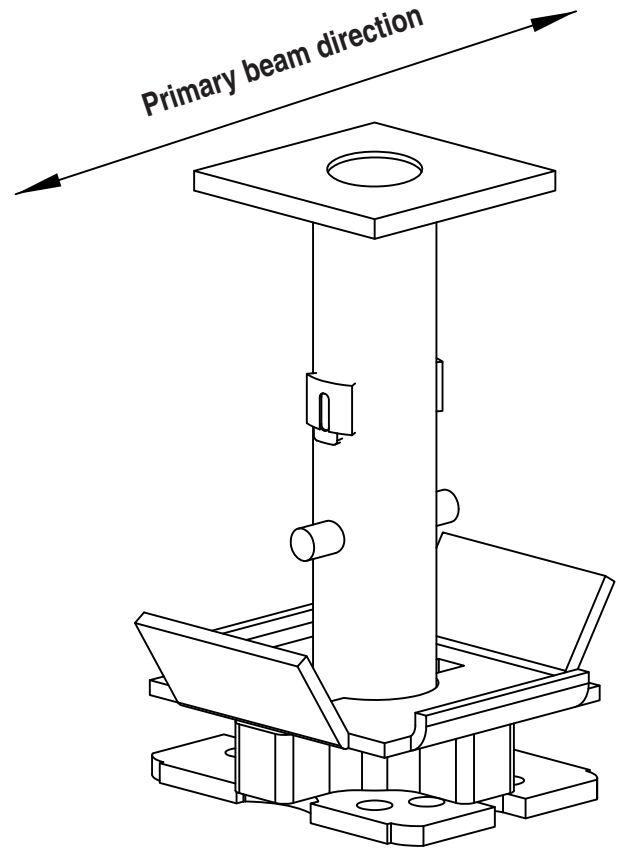
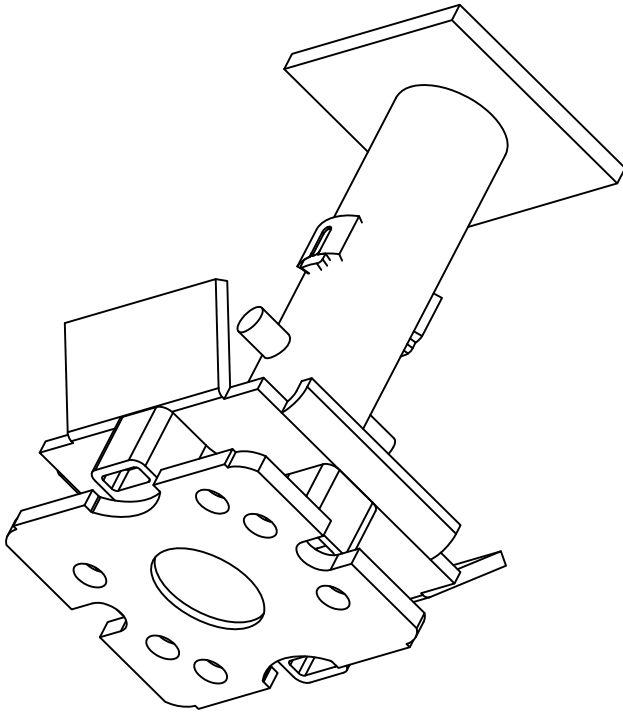


Weight: 4.8kg

# HV drophead positions

## Stage 1

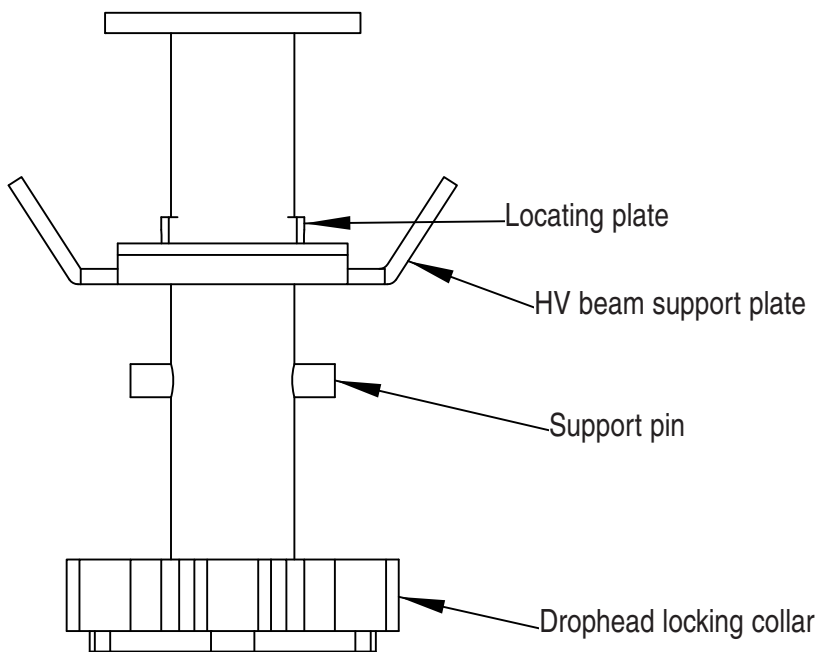
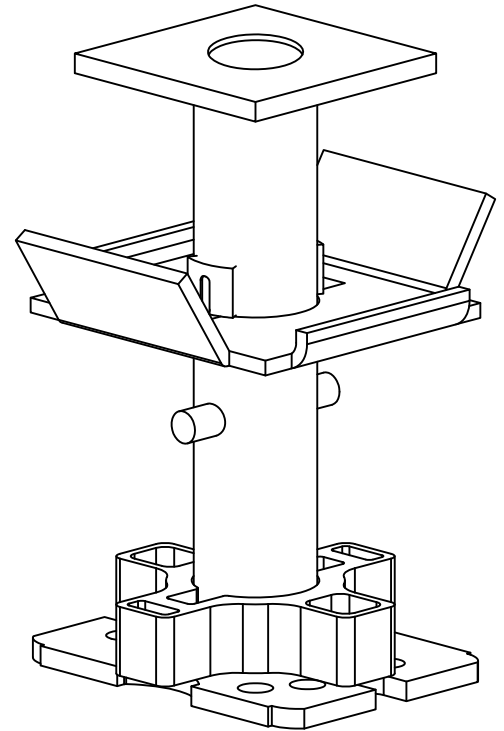
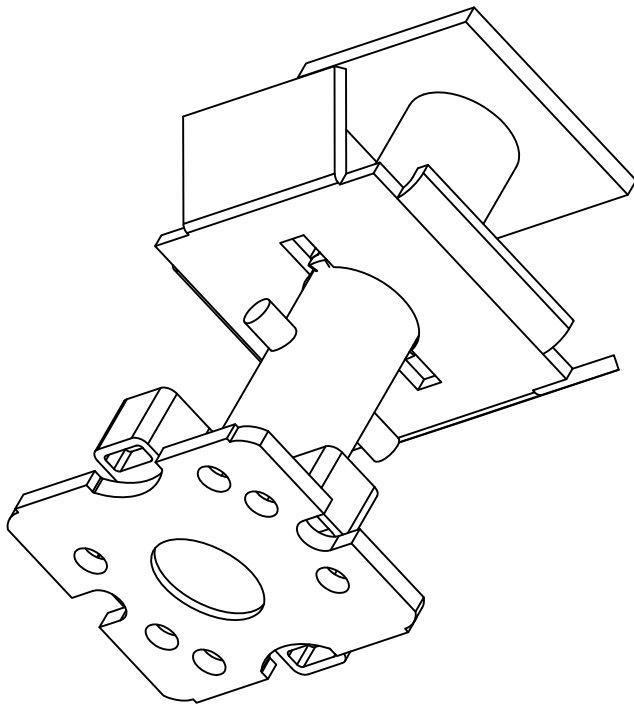
Drophead in lowered position



- HV drophead bolted to prop by means of 2 No. M12x35 speed thread bolts and nuts
- Ensure support pins run parallel with HV primary beams

## HV drophead positions Stage 2

Support plate in position

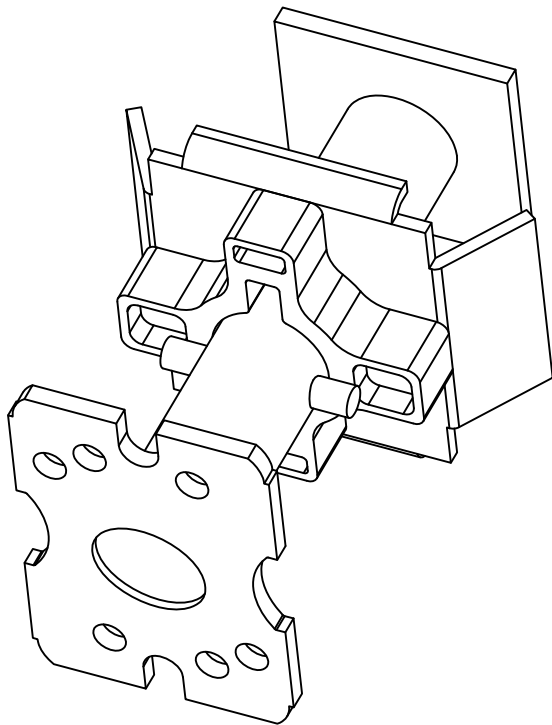


Front view

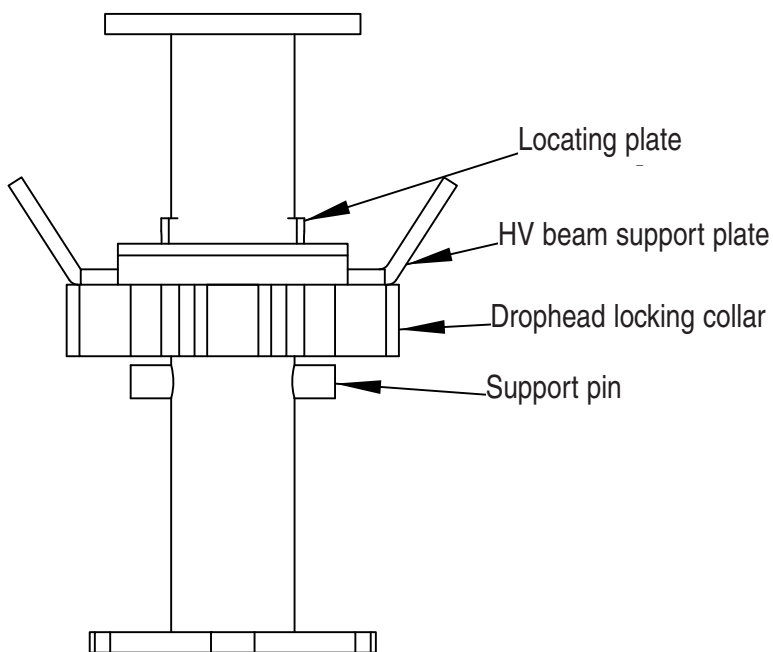
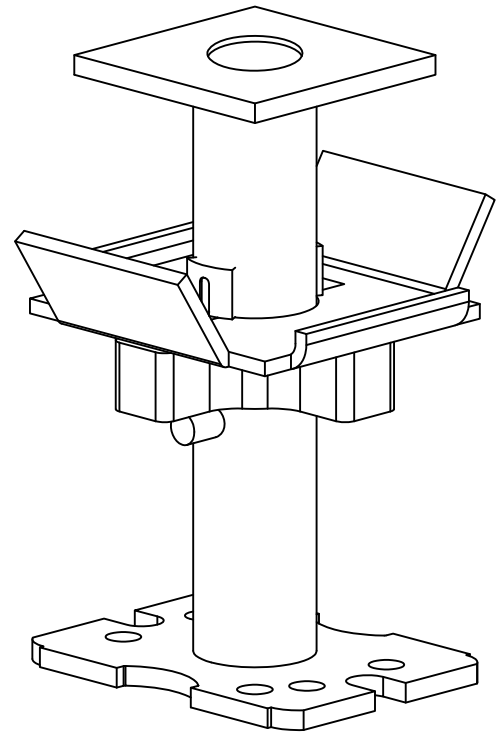
- Lift support plate vertically.
- Position and guide slot into locating plate.

## HV drophead positions Stage 3

Position and rotate locking collar



**Locked position**



**Front view**

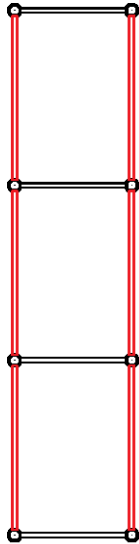
- Lift drophead locking collar over support pin and rotate 90°
- Collar tightens against pin by means of cam action
- Once rotated, tap with hammer to secure



## Standard erection procedure

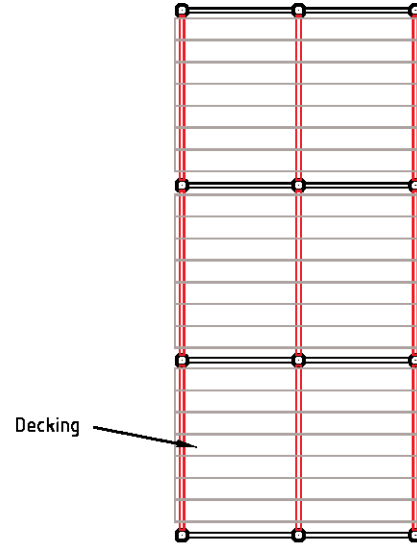
- Fix drophead to Titan leg by means of 2 No. M12 x 35 Nuts and bolts or 2 No. speed thread bolts. Bolts to be fitted diagonally opposite each other.
- Introduce exclusion zone around area of work
- Extend prop to the approximate height required.
- Erect first tower of props and link by means of ledger frames. Ensure support pins of drophead are facing in the primary beam direction.
- Place one end of primary beam onto support plate of locked drophead with opposite end hanging down.
- Lift opposite end of beam and position on next drophead.
- Fix adjacent primary beam in a similar manner.
- Lift and position panels between primary beams. We now have a stable tower/column to proceed from.
- Panels can be fixed from ground level up to a maximum propping height of 2.5m. For heights greater than 2.5m a suitable access platform is required.
- Position one end of primary beam onto drophead with opposite end hanging down.
- Place prop with locked drophead into the opposite end of primary beam and lift into the vertical position.
- Further props may now be added in the same fashion on the primary beam lines.
- As primary beams proceed position and fix panels between aligned beams.
- Introduce Titan ledger frames in every 5 bays in each direction to form stabilising towers.
- For heights greater than 3.5m introduce ledger frames in every 3 bays in each direction. For heights greater than 4.5m introduce ledger frames every other bay in each direction.

## Recommended erection procedure for slab perimeter



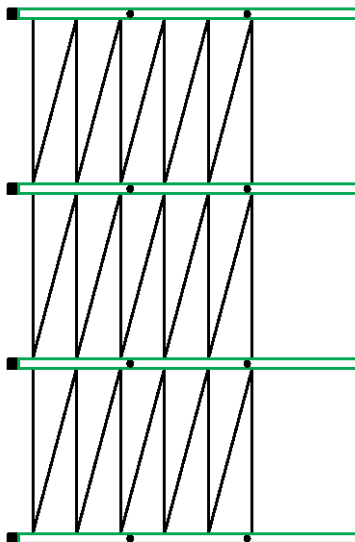
### Stage 1

Erect 6/8 no. Titan legs on 1.8m x 1.2m grid.



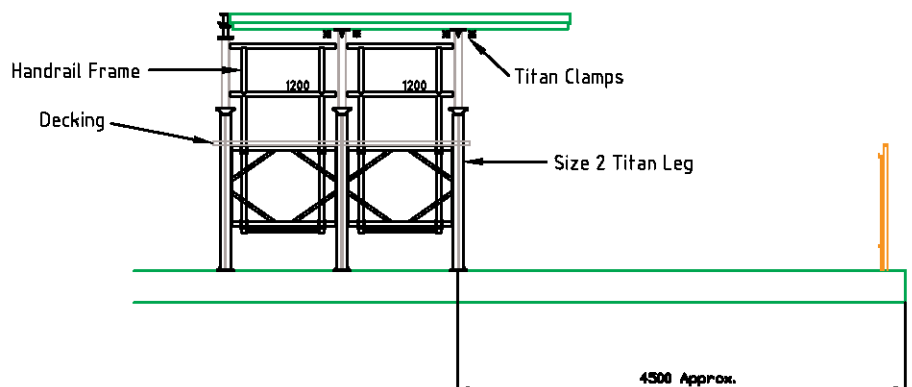
### Stage 2

Erect additional legs and ledger frames to allow for beam and panel installation. Deck out with boards and install temporary handrail system.

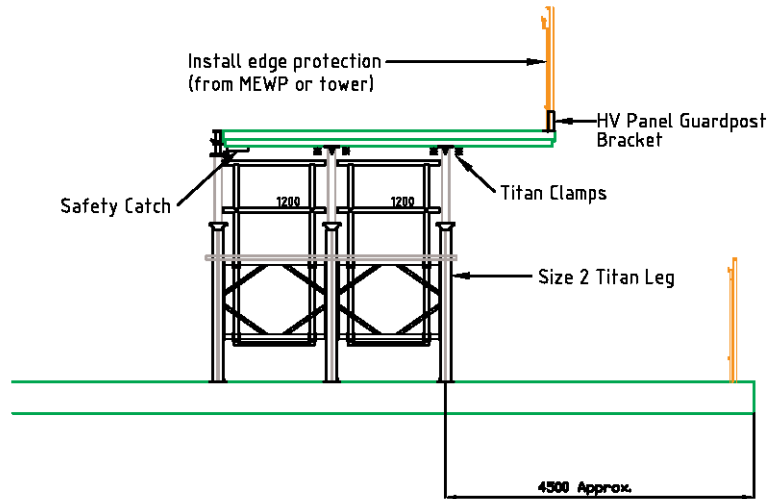
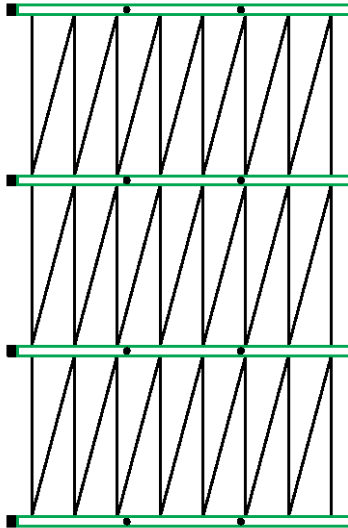


### Stage 3

Install primary beams and panels as per standard erection procedure. Fix prop positioners to primary beam to help locate beam into Titan legs. Props on underside of primary beam fixed by means of 2 no. Titan clamps per leg.

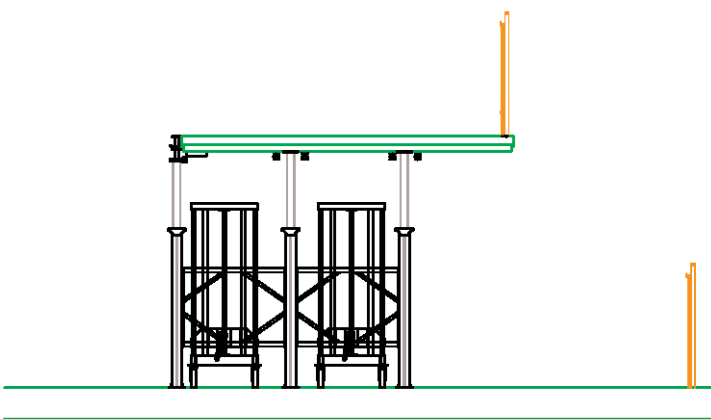


## Erection procedure for slab perimeter (Continued)



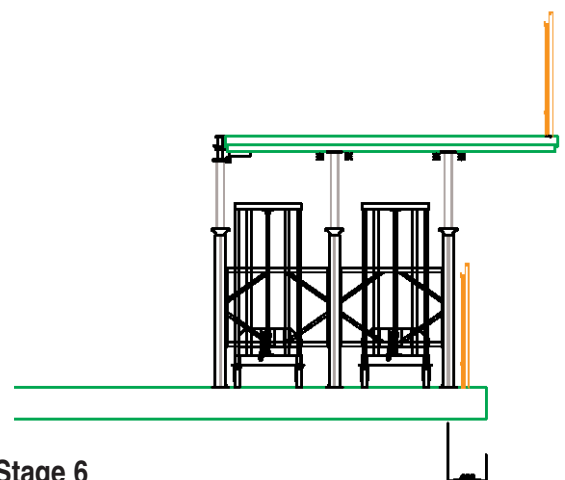
### Stage 4

Install remaining panels as per standard erection procedure.  
Access by mobile tower or MEWP.  
Lock primary beam to drophead by means of HV safety catch.  
Install edge protection system.



### Stage 5

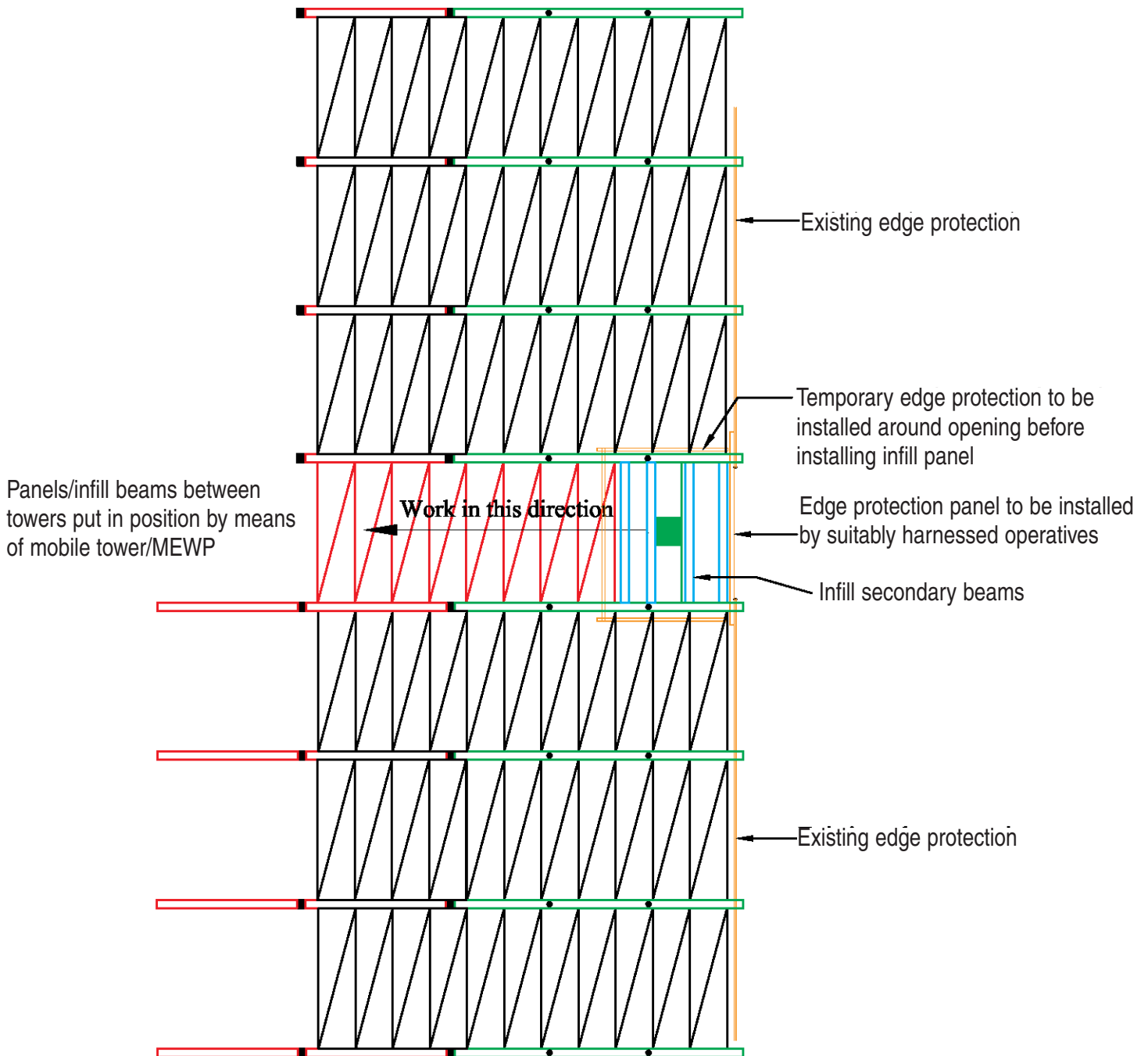
Remove temporary handrail system and decking boards.  
Position 4 No. Titan trolleys on outside frames.



### Stage 6

Trolley tower to slab edge and then remove trolleys.  
Once tower is in position internal decking/support can be erected by standard procedure.

## Erection procedure for slab perimeter at column infill area



All operatives working on panel deck must be suitably harnessed and anchored to a suitable point until full perimeter edge protection is installed.

## Checklist before pouring

- Ensure plumbness of props
- Ensure system is erected as per the design drawing
- Ensure that infill beams are at the correct spacing to suit ply spans
- Ensure any damaged parts are removed and replaced immediately
- Ensure dropheads are locked correctly
- Ensure the safety procedures are adopted, such as handrails to match the construction and health working regulations
- Ensure the whole slab form is stabilised against overturning from either wind forces or horizontal loading due to construction loads.
- Final height adjustment for pouring is now applied.
- Ensure suitable release agent is applied to panel deck before fixing of steel reinforcing.

## Standard striking procedure

- Before striking introduce exclusion zone around area of work
- With a hammer stroke the drophead will be released, and the whole slabform grid will come down 100mm
- Now the panels and infill beams can be removed.
- Titan jack may require re-tightening after drophead release. Strike jack nut with hammer and ensure drophead is central and square on infill filler strip. (see page 22)
- Remove primary beams.
- To avoid the inefficient and uneconomical labour costs put all the components in pallets/storage racks to lift them to the next area/level.

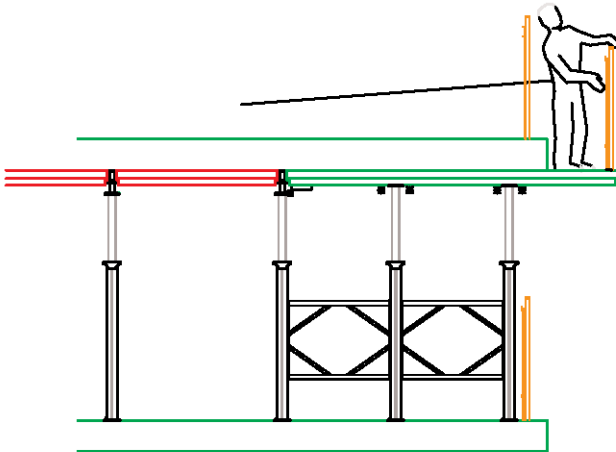


**Incorrect Position – Prop/Drophead off centre and not square to infill strip**



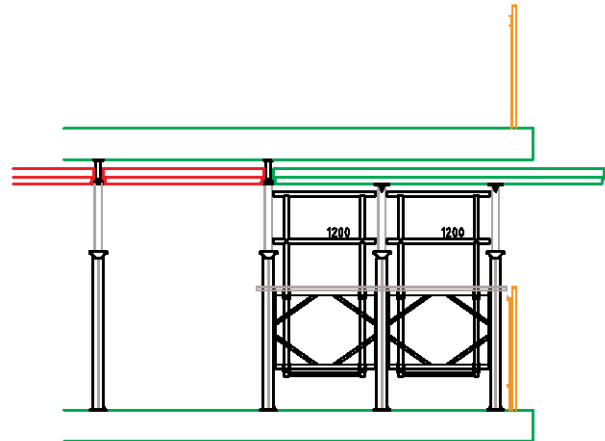
**Correct Position – Prop/Drophead on centre and square to infill strip**

## Striking procedure for slab perimeter



### Stage 1

Exclusion zone to be formed below work area.  
External edge protection to be removed by suitable harnessed operative.  
Fix edge protection system to poured slab.  
External HV panel also removed at this stage.

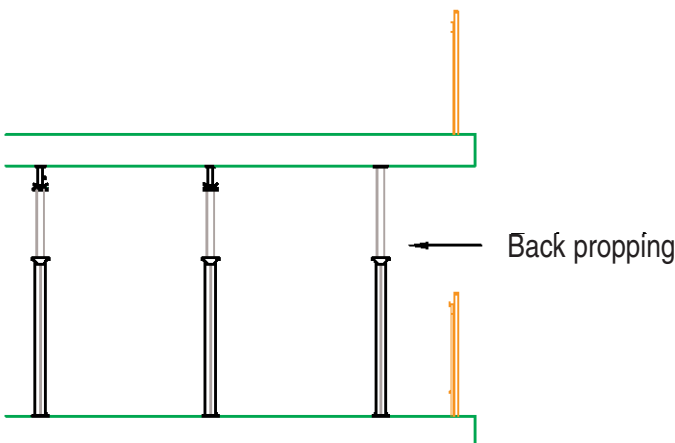


### Stage 2

Re-install handrails and decking.  
Strike dropheads and lower adjustable jacks. Remove panels within decked area. Slide external panel into decked area and remove.  
Undo Titan clamps then lift and lower 3.5m primary beam to deck level.  
Internal panels and beam components to be removed by operative on MEWP or mobile tower.  
All material to be palletised and moved to next location.

#### Note:

Alternative to above would be to remove all ledger frames and then remove panels and beams by means of MEWP or mobile tower.



### Stage 3

Remove temporary handrail system and decking boards.  
Remove Titan ledger frames.  
Reinstate external back propping.

# ISCHEBECK

# TITAN



## Ischebeck Titan Group

Founded in Germany over 120 years ago Ischebeck is renowned internationally for its aluminium formwork and false work systems, trench support systems and ground engineering products.

## Ischebeck Titan Ltd

The company operates from headquarters centrally located in the heart of the UK.



## Product Availability

Substantial stocks of equipment are available ex-stock from the company's strategically located 4-acre distribution site, with most main product lines available nationwide on a 48-hour delivery. Products are available for both hire and outright purchase.

## Technical Support

We will participate in concept stage development. Providing input on applications, production rates, budget design, programming and costings. Active for on site support and training. We can provide guidance on industry special European and national standards.



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