



Detailed Step by Step Guide: How to Install Horizontal Prestressed and Precast Concrete Wall Panels

Overview

It is recommended that all persons involved in the off-loading and installation of any concrete panels should have training and hold current certificates in all relevant areas such as cranes, forklift truck operation, use of access hoists and carry current CSCS cards.

All persons must be equipped with safety clothing including boots, gloves, high visibility clothing, hard hats & safety glasses. Where concrete cutting or grinding is to be carried out, dust masks must be used.

THESE NOTES ARE ONLY ISSUED AS GUIDANCE. ALL SPECIFIC SAFETY INSTRUCTIONS REGARDING WORKS WITHIN THE SPECIFIC SITE MUST BE FOLLOWED AT ALL TIMES.

Hazards

Main hazards include working with mobile plant & machinery, working with suspended precast units, working within a construction site and damage to structure and third parties. Working at heights and falls.

Risks

Main risks associated include death, crushing, dust inhalation & falls

Environmental

There are no specific risks to the environment other than dust and noise during cutting operations.

Manual Handling

There should not be any manual handling of items over 15kg required.

Any manual handling tasks must be executed in accordance of Manual Handling Regulations by persons trained in manual handling.

Plant Required

- Telehandler – Specification to suit unit weight.
- Simple 2 leg lifting chains.
- Hand tools.

DISCLAIMER: Please note that any information provided is to be used as a guide only. Any lifting/handling operations should be carried out by trained and competent personnel only. ACP (Concrete) Limited will not be held responsible for any damage or injuries in connection with handling or installation not carried out by ACP (Concrete) Limited.

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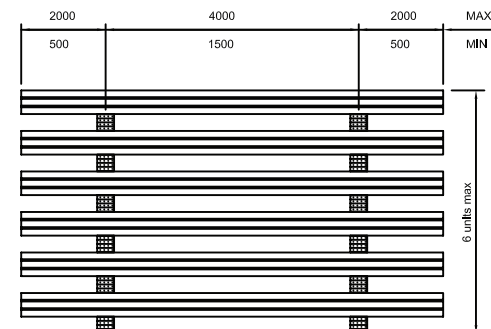
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Steps 1-5: Installation Method

Step 1

Suitable site access and safe unloading areas must be arranged prior to delivery of units. If there is any concern over ground stability, then an engineer must be consulted. Precast concrete panels should be unloaded using fork tines on telehandler and stacked on level ground as shown in drawing below (no more than 6 high).

Refer to: CAD Drawing - Panel stacking specification



Note
Panels only to be stacked on firm level ground.
Timbers must be aligned.

Stacking timbers MUST be correctly arranged to ensure stack stability and avoid possible failure in the precast units.

Step 2

Steel support post centres should be measured and the correct units allocated to each bay. Datum levels should be checked and suitable packing shims placed to suit levels. Site foreman must check suitability of landing cleats (where applicable) for seating area and intended loads. Any concerns must be relayed to Engineers for ACP & Building Suppliers and investigations completed before panel installation can commence.



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Step 3:

Single precast units should be transported from stacking area to lifting area via telehandler. Units must be lowered to ground onto timber packers prior to slinging.

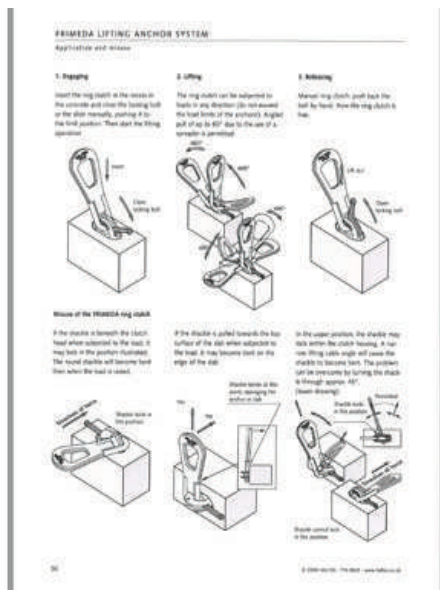
Step 4:

Units should be lifted using suitable telehandler with 2 leg simple certified, tested chain with safety hooks onto tested lifting clutches or lifters (available from ACP Concrete Ltd) located in lifting inserts or holes cast into the top edge of the panels.



Checks of rated lifting capacity of loader, lifters, chains or slings MUST be made against weights of Units before handling. Check lifters and chains are fully secured.

Refer to: Lifting Clutch Use



Step 5:

Move panels into position starting with panels for main run bays and then the return wings.

Steps 6-8:

For panels positioned between the columns:

Step 6

Check orientation of the panels. Most panels are designed to have the smoothest side facing the load. This is not always the case.

CHECK WITH ACP (Concrete) Ltd IF THERE IS ANY DOUBT.

Position panels between steel columns, pack to ensure even bearing at each end. Fixing packing material (wood or steel) to ensure panels cannot possible shift out of position.

Step 7:

All panels should be assembled 'dry' with sealant once all walls are complete.

Step 8:

Secure panels in position (using bolts and plates if supplied)

Now go to Step 9

OR Steps 6-8:

For panels positioned on the inside face of the columns:

Step 6

Check orientation of the panels. Most panels are designed to have the smoothest side facing the load. This is not always the case. CHECK WITH ACP IF THERE IS ANY DOUBT. Position panels to suit centres of columns, this should result in a gap of approximately 12.5mm between panels. This gap may vary due to exact column spacing.

Step 7:

All panels should be assembled 'dry' with sealant once all walls are complete.

Step 8:

Secure panels in position using bolts and plates supplied before removing lifting gear support, do not over tighten.

Now go to Step 9



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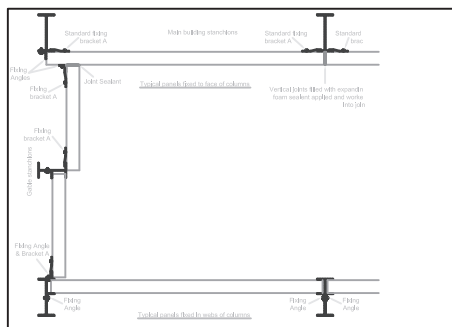
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Steps 9: Installation Method

Step 9

Install return panels as above. Finally position the corner panels; these will meet the side panels some way along from the end see drawing below.

Refer to: CAD Drawing - Fixing options for precast horizontal panels.



Once positioned offer up suitable angle support brackets and mark fixing points avoiding strand positions. Fix angle in position and secure panels and remove lifting gear.

Step 10

Vertical joints should be backed with preformed backing rod (or expanding foam) to provide a joint of no more the 15mm deep. Mastic sealant will be applied as below. Where possible masking tape should be placed to either side of the joint prior to mastic placement to ensure neat edges.

Step 11

Apply sealant to horizontal and vertical joint's using (available from ACP Concrete Ltd).



Please follow instructions on application of sealant for the "Health and Safety Data Sheet" for joint sealants. One 'sausage' should seal approximately 8m of joint. Tool into joint using a pointing trowel or wetted stick.

Refer to: Sika Construction Data

Step 12

Fill lifting holes (if used) and any areas damaged during installation with a bonding mortar using a suitable SBR (i.e. Unibond, Sika Latex etc)

Step 13

Apply surface protection where necessary.

Step 14

Once store is loaded, check and tighten all bolts and check regularly.

Step 15

An annual maintenance check should be carried out by a suitable responsible person. Check all surfaces and fixings for any signs of corrosion. Also check all surfaces of the panels and supporting structures for any signs of cracks or impact damage. A qualified engineer must be contacted if any corrosion or cracks are noted.

Notes to be read in conjunction with ACP drawings.

IF IN DOUBT ASK, WE WILL BE PLEASED TO HELP.

Safe Storage & Disposal of Materials

Sika Sealant

- No special consideration for storage other than avoidance of frost. Store in dry when not required
- No special requirement for disposal of packaging. Avoid litter and use skips on site. Remove unused packs from site for later use on other projects.
- Avoid watercourses with material and packaging.

Concrete Panels

- No special consideration for storage
- No special requirement for disposal