CREAGH
INNOVATION IN CONCRETE

Safety Guide
For Construction

Guidance for handling and installation of hollowcore units/floor slabs.

Best Practice

This document aims to provide a comprehensive guide to the safe installation of Hollowcore units/floor slabs.

Step 1 Banking vehicle into site

On arrival to site, the delivery vehicle will be met by a slinger/banksman and banked into position for unloading, as per the lift plan.

An exclusion zone is closed around the vehicle.

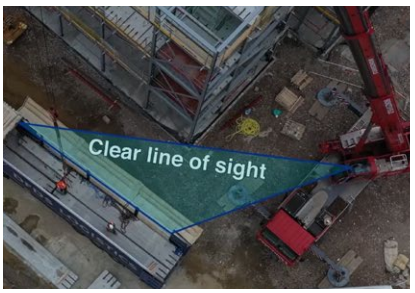
Scenario 1

Rear of trailer

A clear line of sight must be established between the crane operator and a competent vehicle banksman.

Scenario 2

Side of trailer



A clear line of sight must be established between the crane operator and a competent vehicle banksman.

Step 2

Access to the trailer

Access to the trailer will be gained by using the ladders that are attached to the trailer or via a podium designed to fit the rear of the trailer.

Step 3 Opening the trailer

Scenario 1

Rear of trailer

The slinger/banksman will open the rear doors and roof of the trailer. Ratchet straps can be used as edge protection.

Scenario 2

Side of trailer

2 ratchet straps are drawn along the length of the trailer from the inside. Airbags are deployed and inflated along the length of the trailer.

The curtain can be drawn open ensuring the crane operator can see inside.

Step 4
Slinging

The slinging of the units will only be carried out by a trained CPCS trained slinger/banksman. The slinger will ensure that the load is secure and safety chains are fitted to the precast floor units correctly prior to carrying out the lift. Safety chains are attached at low level. The slinger/banksmen are to ensure safe foot placement when on the back of the trailer attaching lifters

Step 5
Lifting chains & pins

All chains and lifting equipment will be visually inspected and recorded on a LOLER check sheet. This document will be completed weekly. Chains will have a visual inspection each time they are used, checking for damage from buckling or frayed slings. If the chains or slings are damaged they are discarded and marked -

DO NOT USE, OUT OF SERVICE.

Step 6
Floor edge protection

All open edges will have a propriety edge protection system or scaffolding erected to provide edge protection.

Step 7
Options for working safely at height

1 Nets

On steel frame buildings safety nets are installed by FASET trained operatives to provide a collective fall arrest system.

2 Airbag Safety System

Supplied and installed by competent installer, the Airbag Safety System comprises a range of standard sized modular bags, these are interlinked for quick and simple site placement in conjunction with the precast floor installation. The adaptable system is suitable for commercial and residential sites.

3 Leading Edge

In cases where it is not possible to have a fixed barrier, airbags or nets in place to land precast units, a fall restraint system will be used, typically LEADING EDGE. This is a system used by trained and competent operatives. A life line is set between two points and restraint lanyards attached to that lifeline. This restraint system allows the operative to work safely at height.

Best Practice

Step 8
Plank install

The installation of precast planks will be carried out by trained precast installers under the supervision of a lift supervisor and SSSTS qualified supervisor. Once the lifters are attached, additional safety chains are placed around the plank for safety of installation.

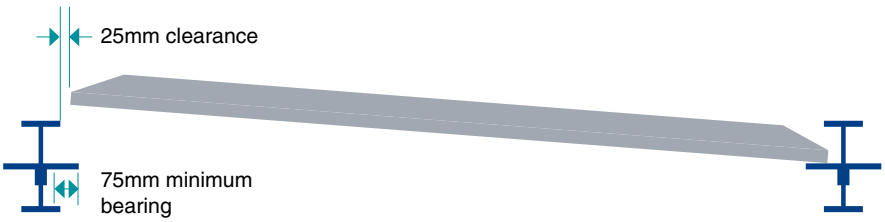
Care must be taken during the lowering of precast planks through steelwork. Tag lines to be used to guide the units through the steel.

When installing units into the web of the steel avoid snagging. Always ensure adequate bearing is achieved.

Any loose steel beams, lintels etc. should be provided, located and secured in position to ensure the stability of the structure prior to the precast unit installation.

Grouting of hollowcore units should be carried out as soon as possible after installation of units to avoid the accumulation of rubbish/ debris in the joints. The joints should be wetted and then in filled with a workable concrete of minimum strength C30/10mm aggregate.

When planks are installed sufficient bearing must be achieved and checked.



Step 9
Edge trimming

Edge trimming to be installed by operatives wearing appropriate PPE; ear defenders and impact goggles.

Step 10
Shuttering

Access to install shuttering will be gained via podiums.

Step 11

Tie bars & grouting

Tie bars and grouting will be carried out by a wet works team. Ready-mix grout will arrive to site and concrete pumps will be used. A banksman will be used to assist with the positioning of the concrete pump. Where grout is mixed on site this will be carried out by an operative wearing FFP3 dust masks who have been facefit tested.

Units must be grouted ASAP to ensure the structural integrity of the build.

During screeding and structural topping pours ensure planks are not overloaded and pours are evenly spread. Hollowcore units in their temporary condition have been designed to carry the loadings associated with the structural topping and a temporary construction traffic loading of 1.5kN/m ^{2} in addition to their own self weight during grouting works only. Grouted unit loadings should be followed are as per floor design.

Step 12

Finishing

Finishing works will be carried out by fully trained operatives using scaffold or podiums, while grinding operatives will wear impact goggles, ear defenders, FFP3 dust masks and trained face fit personnel.

Note

Barring

Barring slabs– care to be taken when barring slabs as to not compromise the slab or bearing point.

No trades under any circumstances are to operate machinery e.g. excavators and dumpers under un-grouted floor planks.

Floors must be grouted and grout allowed 72 hours curing before loading with materials, below is an extract from our RAMS.

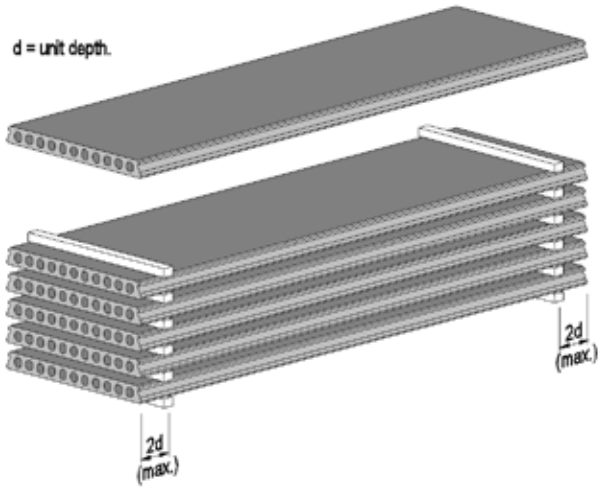
Client to ensure the stacking of materials upon fully grouted 'ccpl' units is evenly distributed over floor area and must not exceed approved design loadings. 'Ccpl' units to be grouted with c30/10mm nominal aggregate ready mixed concrete. Grout must be densely compacted and no construction traffic/loadings allowed on floor for 72 hours after grouting has finished. Assuming appropriate weather conditions during and after grouting.

Addendum

Stacking slabs on site

Slabs need to be stacked as per guidance with skids in correct position

Stored slabs are to be visually checked by installation team for damage, cracking etc. prior to installation.



Nominal Bearing widths are to be adhered to – any discrepancies contact the project engineer

Nominal Bearing Widths (mm) - Steel

Unit Depth	Span	Nominal Bearing Width	Absolute Minimum Allowed on Site
150	7000	75	40
200	8000	75	40
250	10000	75	40
300	13000	85	50
400	16000	90	50

Nominal Bearing Widths (mm) - Blockwork

Unit Depth	Span	Nominal Bearing Width	Absolute Minimum Allowed on Site
150	7000	100	65
200	8000	100	65
250	10000	100	65
300	13000	110	75
400	16000	120	75

Nominal Bearing Widths (mm) - Concrete Strength Class C25/30 or over

Unit Depth	Span	Nominal Bearing Width	Absolute Minimum Allowed on Site
150	7000	85	65
200	8000	85	65
250	10000	90	65
300	13000	95	75
400	16000	110	75

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These guidelines are in accordance with but not limited to:

Legislation/Approved Codes of Practice

- The Health and Safety at Work etc Act 1974 & The Health and Safety at Work Order 1978
- The Construction (Design and Management) Regulations 2015 & 2016 (NI)
- The Management of Health and Safety at Work Regulations 1999
- The Provision and Use of Work Equipment Regulations 1998 (PUWER)
- The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
- Code of practice for safe use of cranes BS EN 7121
- Precast Flooring Federation Code of Practice for: The Safe Installation of Precast Concrete Flooring and Associated Components
- Code of practice for temporary works procedures and the permissible stress design of falsework BS 5975:2019
- The Workplace (Health, Safety and Welfare) Regulations 1992
- The Work at Height Regulations 2005
- A guide to the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013
- The Building Regulations

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