



CREAGH
INNOVATION IN CONCRETE



INSTALLATION GUIDE

SPANThERM BEST PRACTICE GUIDE

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Creagh offer a full supply and fit service, laying the Spantherm floor onto your pre-prepared groundworks and grouting. Should you opt for our supply only option (when you prefer installation by your chosen groundworker), this document will act as a best practice guide to install.



DELIVERY TO SITE

- Slabs will be delivered on 40 or 45 foot articulated vehicles as standard.
- Customers must notify the factory of any delivery restrictions which would prohibit 40 or 45-foot trailers gaining access to site, before placing an order.
- Slabs can be delivered on shorter trailers or rigid vehicles, when there are site access issues. Please ask your Sales contact for any price implications.
- Standard practice is for full loads to be delivered to site with 85 -110m² of slabs, depending on the product type and dimensions. Site must have the ability to store slabs until installation.
- Deliveries must be off loaded immediately to avoid potential demurrage charges from the haulier.
- On difficult sites or when nearing site completion, when space is at a premium, please contact the dispatch team to discuss site specific requirements for loads.
- The slabs will be loaded on the vehicle in such a manner to make a stable load and not necessarily in any order relating to installation - i.e. narrower slabs will be on top.
- Unloading, using a 13t digger or crane, can be done using a lifting clutch or a proprietary lifting clamp as below.



HANDLING SLABS

- There are 4 lifting points on the top surface of each slab.
- 2.5T pin anchor ring clutches must be fixed to each lifting point, in order to lift the slab safely.
- See Appendix A, for 2.5T pin anchor ring clutch technical data sheet.
- It is the Customer's responsibility to off load, store and install the slabs in a safe manner.

Ring clutches and chains are not supplied by the slab manufacturers. They can be easily sourced from distributors such as Euro Accessories or hired from outlets such as Speedy Hire.



Lifting Point

Guide to Slab Weights	
Slab Length	Slab Weight
1.0m	0.26T
2.0m	0.52T
3.0m	0.78T
4.0m	1.05T
5.0m	1.30 T
6.0m	1.56T

STORING SLABS ON SITE

- Where possible, slabs of similar length should be stacked. Longest and widest slabs should be at the bottom of the stack with shorter and narrower slabs on top up to a maximum of four units per stack.
- The need to climb onto stacked components to secure chains or other means of lifting must be avoided.
- In instances where doubt exists concerning any aspect of such storage, site must refer back to Creagh, before allowing units to be stacked.
- Slabs should be stacked on level ground with adequate skids placed under the bearing points of the bottom slab in the stack.



PREPARATION OF THE PLOT

- The bearing surface should be built to the correct height and sufficiently cured to take the weight of the slabs. Curing time will be dependent on the mortar used and prevailing weather conditions.
- Bearing surfaces should be built as flat and level as possible. Remove all mortar snots, as unevenness will be reflected in the floor after the slabs are installed.
- On sites using steel or timber frame structures there is likely to be some requirement for shimming of the sole plate. Ensuring a flat and level bearing will help to minimise this requirement.
- Pipework and conduits should be in place. If support strapping of pipes is required, there are systems available which are compatible with Spantherm slabs. Please contact Creagh for details.
- Telescopic vents and lintels should be in place, where required.
- DPC should be laid in accordance with BBA and particular site requirements. Details of typical construction detailing and best practice regarding the placement of DPC are included with each project drawing.
- It is a matter of site preference for the splash course to be in place or omitted, at the time of installation.



LEVELLING THE FLOOR



- Prior to commencing the installation, the sub-structure should be surveyed to identify any high and low points.
- Should there be discrepancies, individual slabs can be lifted and structural shims (available from many Builders Merchants) inserted to pack up slabs to overcome uneven sub-structure blockwork. However, this is not a preferred method – every effort should be made to ensure bearing surfaces are as flat as possible prior to installation



- Care should be taken to ensure that shims are inserted under the slabs in a safe manner to avoid trapped fingers. If in any doubt consult Creagh's technical team.
- Shims, if required, should be placed directly under the concrete bearing stools on the underside of the slab to ensure maximum contact with the sub structure blockwork below.

Manufacturing Tolerances

Floor Slab	Variation
Length	+/- 15mm
Width	+/- 10mm
Thickness	+/- 10mm
Straightness or bow (deviation from intended line)	
Up to 3.0m	+/- 8mm
3.0 to 4.5m	+/- 10mm
4.5 to 6.0m	+/- 12mm
Flatness	
Deviation from 2.0m straight edge placed across one slab should not exceed 8mm	



SLAB INSTALLATION

IMPORTANT : Slab locations are not interchangeable.

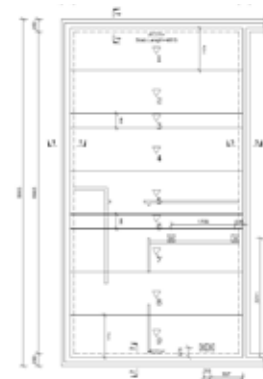
- Slabs should be lifted using the 4 lifting points on the surface of the slab.
- Care must be taken to ensure that the slabs are lifted and installed in a safe manner. (Sample method statements are available on request).
- When placing individual units within the floor, it is essential to refer to the floor plan provided which details individual unit locations.
- Care should be taken when placing slabs to avoid dislodging or damaging pipe work.
- Where units share an intermediate bearing wall, a minimum bearing of 100mm, for each slab, should be provided in all instances
- Bearing lengths :
Masonry = 100mm
Concrete = 80mm
Steel = 70mm
- **Please heed the health and safety notice.**
- Ensure that the DPC is secured under the slab and that the slab has sufficient bearing on the sub structure blockwork.
- Sites generally start with the slabs taking side bearing, on the perimeter walls and work inwards.
- Bearing will typically be onto 100mm 3.2N blocks.
- When placing slabs, ensure cavity is maintained to the designed width.



HEALTH & SAFETY

Contractors installing slabs must ensure all lifting operations comply with LOLER regulations and units are installed in a safe manner by competent and qualified fitting squads having adequate supervision as per current HSE/ Construction Industry guidance.

If you require any more information please contact Creagh's Health & Safety or Technical Department



GROUTING JOINTS BETWEEN SLABS



- All joints between slabs and lifting points should be grouted with C25/30 (10mm max chip) concrete.
- It is advisable to wet the slab before grouting to avoid grab and assist in leaving a smoother finish to the surface.
- The concrete should be packed tight into the joints and levelled off.



Concreting Around Service Holes

- Openings around pipes should be packed tight with a mineral wool type insulation or similar.
- The packing should be pinned into the EPS of the slab.
- All openings should then be concreted with min 50mm deep C25/30 (10mm max chip) concrete.



Protecting the Floor during Construction

- After grouting, floors are available to follow-on trades the next day, thereby allowing the grout time to set.
- The floor provides a safe working and structural platform, which allows for construction of the superstructure following installation. Full strength is achieved in 72 hours.
- When loading out, blocks should be placed in the outer end thirds of the slabs and over slab joints to avoid overloading the slabs. In the same way that upper floors would have load spread around. Maximum one pack of blocks per slab.
- If in any doubt about loading out please consult Creagh's Technical Services.
- Creagh must be contacted before any alterations are made to the floor e.g. adding extra openings.
- No extra variable or permanent loads, such as repositioning a wall, can be applied to the floor without prior consent from Creagh.



SCREEDING

- The floor can be finished with a variety of screeds and self-levelling compounds. If a screed is being used, such as with a gas membrane, it does not need to be a structural screed, as the slabs provide the structural element of the floor.
- Care should be taken to ensure the floor surface is prepared and screeds/self-levelling compounds are applied as per the appropriate manufacturer's specifications.



Creagh offer a full supply & fit service subject to project scale and location. In each case we would lay the Spantherm floor onto your pre-prepared groundworks, leaving it fully grouted.

- **Rapid installation**
- **Less vehicular movements on site**
- **2 man hi-ab crew can install up to 400sqm in one day**
- **Radically reduces labour on site**
- **Operated at ground level for a safer installation (eliminates working at heights)**

APPENDIX A

2.5T pin anchor ring clutch technical data sheet

Pin Anchor Ring Clutches & Combination Ring Clutches

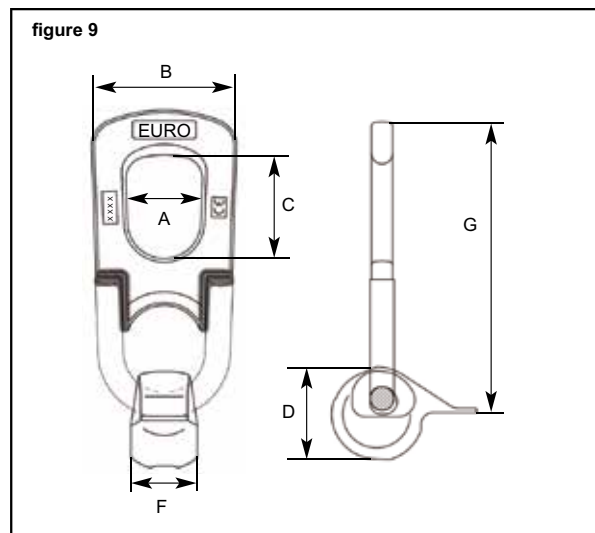


table 19

Pin Anchor Ring Clutch Dimensions

Load Capacity (tonnes)	A (mm)	B (mm)	C (mm)	D (mm)	F (mm)	G (mm)
1.3	48	77	60	55	33	165
2.5	50	92	75	68	42	205
5.0	68	121	86	88	57	240
7.5 - 10.0	84	170	110	108	77	346
15.0 - 20.0	125	230	140	146	115	520
32.0	155	303	175	195	155	590

The Pin Anchor Ring Clutch is a robust lifting device manufactured from several cast components. The lifting clutch is designed to fit only the Pin Anchors and Recess Formers for the chosen load category. This in built safety feature, ensures that mismatching of load groups cannot occur.

The safe working load of the Pin Anchor Ring Clutch is based on a factor of 3 for safety. Each lifting clutch is stamped with a unique item number, it is supplied with a corresponding numbered test certificate verifying the item has been tested individually, to a proof load equal to twice the safe working load marked on the ring clutch.

Routine Inspection and Retirement

Pin Anchor Ring Clutches & Combination Ring Clutches should be inspected before each use by a competent person. The inspection should involve a visual check for obvious defects, deformation of the oval ring or lifter body, cracks and obvious excessive wear. If any of these defects are found the lifting device should be discarded. If they are bent do not bend back into shape. Use of the Ring Clutch must not commence if any of the identification markings are worn away and no longer visible.

In addition the Ring Clutch & Combination Ring Clutch should be inspected and tested by a recognised organisation at least every twelve months.

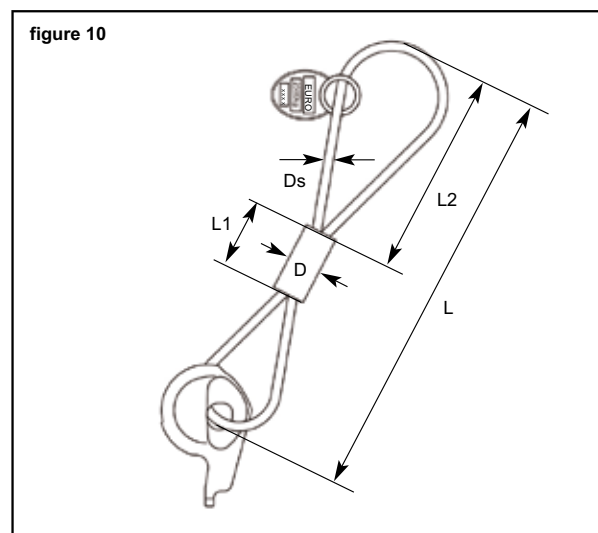


table 20

Pin Anchor Combination Ring Clutch Dimensions

Load Capacity (tonnes)	L (mm)	L1 (mm)	L2 (mm)	D (mm)	Ds (mm)
1.3	320	60	150	17.0	8
2.5	560	105	250	28.0	14
5.0	690	155	300	37.5	18
10.0	1100	200	500	54.0	26

The Combination Ring Clutch is similar in specification to the standard Pin Anchor Ring Clutch, but supplied with a wire rope lifting chain attachment. The wire rope offers greater flexibility when lifting elements with edges that may come into contact with the Ring Clutch chain attachment link. Minimising the potential cosmetic damage of the concrete.



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