

Lifting the Blocks

The following guidelines provide an overview on best practice when lifting Interbloc blocks. This should be read in conjunction with the **Approved Code of Practice for the Safe Handling, Transportation, and Erection of Precast Concrete** available from Worksafe NZ.

1. Equipment

1.1 Lifting Anchors

Interbloc™ blocks incorporate a Reid® certified lifting anchor as the central lifting point. Standard Interbloc™ 1200 blocks use a 1.3t anchor 120mm long. 1800 and 600 blocks incorporate two 1.3t anchors 120mm long. The Foot Anchor Capacity Table below outlines the Working Load Limits of Foot Anchors for the given strength of concrete at the time of lifting:

Anchor Load Group	Anchor Length	Concrete Compressive Strength at Lift (f'c)				
		10 MPa	15 MPa	20 MPa	25 MPa	30 MPa
1.3	120	1.30	1.30	1.30	1.30	1.30

Source: Reid Construction Systems Design Guides 2008

Foot anchors should be inspected and free of damage, nicks or rust before lifting.

Note:

Foot anchors are designed to be lifted vertically. Under no circumstances should the lifting anchor be used outside its design parameters.

Refer to Interbloc™ Quality Control Guidelines for information on minimum block strength.

1.1.1 Lifting Clutch

Interbloc™ blocks are lifted using a Reid® lifting clutch. The lifting clutch is easily connected to the anchor head by admitting the anchor head into the slot of the lifting clutch and rotating the tab of the lifting clutch until it rests on the concrete surface.

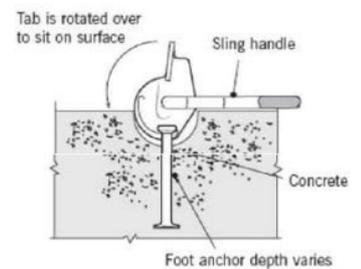
The clutch is designed so that it cannot accidentally disengage while under load. Despite this care should be taken when lifting.

WARNING: Using any lifting device other than a Reid® Clutch will void the block warranty and may lead to a failure of the lifting anchor.

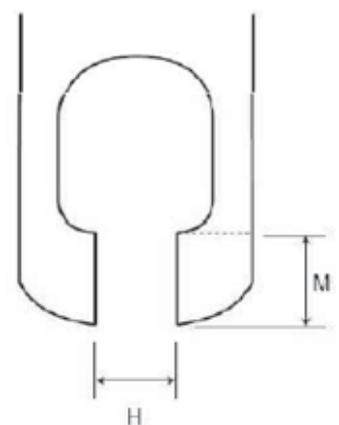
Lifting clutches should be regularly be checked for wear and tear. The table below shows the maximum and minimum thicknesses for the clutch.

Size	H (max)mm	H (min)mm
1.3	13	5.5

Source: Reid Construction Systems Rigging Guide



CHECK FOR WEAR



1.1.2 Lifting Machinery

Common equipment used when lifting blocks include:

- Forklift
- Front end loader (tractor, telehandler etc)
- Excavator
- Crane

Regardless of the machine chosen, it should have a minimum lifting capacity of 1 tonne for moving standard 1200 blocks, and 1.5 tonne when move 1800 blocks.

The use of any of the above lifting equipment is subject to Approved Codes of Practice issued by the Ministry for Business, Innovation, and Employment. The operator of such equipment should be competent and aware of industry best practice and regulatory requirements.

1.1.3 Transportation and Shock Loading

Transporting loads over uneven terrain can induce anchor loads that are 5 times greater than those calculated from weight of the concrete element. As such always lift the block using forks under the block when transporting over uneven terrain. Failure to do so will void the block warranty and may result in failure of the lifting anchor.

1.2 Rigging

1.2.1 Chains

Chains are used to connect the lifting clutch to the lifting point on the lifting machine.

Only certified chains should be used to lift blocks. Chains should have the following minimum lifting capacities:

Block	Chain Lift Capacity
600	500kg
1200	1000kg
1800	1500kg

Before lifting, chains should be inspected for:

- Current test tag
- Corrosion
- Worn, Stretched, or deformed links
- Worn, stretched or deformed hooks and fittings
- Wear on load pins and to ensure retainers are installed correctly

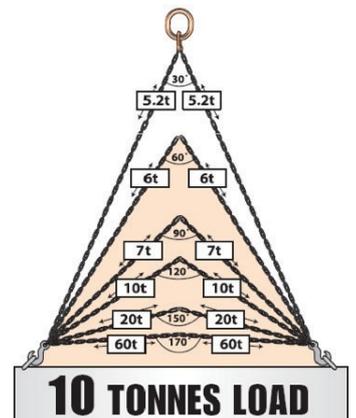
Operators and installers should refer to the Ministry of Business, Innovation and Employment's Approved Code of Practice for Load-Lifting Rigging.

1.1.2 Sling Angle

There are two main types of machinery used to lift the blocks via the foot anchor.

Forklift or Front-End Loader with Forks or Telehandler

Where a forklift or front-end loader with forks is used to lift and maneuvers the block, a load tested and certified boom should be fitted to the forks as per the manufacturer of the boom recommendations (correctly chained to the fork mast).



Excavator

When an excavator is used to lift and maneuver the blocks, the chain should be attached to the end of the excavator arm via a certified connection, preferably without the bucket.

Angle of Chains

When lifting a standard 1200 block the chain hangs vertically from the attachment point on the machinery.

When lifting either a 600 block or 1800 block two chains are used to connect the lifting clutches to the machinery. The angle at which these chains hang from the machinery impact the load capacity of the lifting anchors.

As a minimum the angle at which the chains hang from the machinery should be no greater than 60°.

Source: Reid Construction Systems 2007

1.3 Safety

Safety is the paramount concern when operating machinery and lifting heavy blocks. Below are a list of basic safety guidelines – in no way is the list exhaustive or a substitute for a proper job hazard identification process.

- **Do not stand under, or near a block while it is being lifted.**
- **Machinery should only be operated by competent persons with appropriate training and certificates.**
- **All lifting clutches, chains, and booms should be regularly checked and be in good working condition.**
- **Only Reid® SwiftLift™ Clutch's should be used, use of any other lifting clutch/device will void the block warranty and may result in failure of the lifting anchor.**
- **Blocks should never be transported over distances or rough terrain using the lifting anchor.**
- **Where it is intended the blocks are to be lifted regularly (more than five times in one year) blocks with dual lift anchors will be required.**