INSTALLATION GUIDE FOR STANDARD RETAINING WALLS

This guide is intended for use by persons responsible for the installation of Precast Reinforced Concrete L Wall Retaining Walls manufactured by FP McCann.

FP MCCANN
PRECAST
CONCRETE
SYSTEMS

1.0 INTRODUCTION

- This document describes the recommended procedure for the installation of FP McCann Precast Reinforced Concrete L Wall Retaining wall units.

- The Precast Reinforced Concrete Retaining wall is available in varying sizes; Table 1 below gives a summary of each size available.

TABLE 1 - FP MCCANN RETAINING WALL DIMENSIONS

L Walls

Height (mm)	Bearing Length (mm)	Unit Width (mm)	Weight (Kg)	Weight (+5%) (Kg)
1000	500	1000	395	415
1500	750	1000	631	665
1750	875	1000	761	800
2000	1000	1000	890	935
2500	1250	1000	1316	1385
3000	1500	1000	1740	1830
3750	1875	1000	2596	2725

Note: for a copy of drawings and full design detail please contact a member of the FP McCann Technical Department on 01476 562277 or visit the website www.fpmccann.co.uk

2.0 DISCLAIMER

- This document is produced by FP McCann as a 'recommended guideline document to the industry'. FP McCann will take no responsibility for any liability resulting from any unauthorized lifting or modification that are carried out and it is the responsibility of the customer to ensure the load is lifted correctly.

- Its purpose is to aid contractors in the installation of Precast Concrete Retaining Walls. It is the responsibility of the contractor to ensure that the installation is carried out in accordance with the design specifications for the site.

- It is the responsibility of the contractor to install the Precast Concrete Retaining Walls safely in accordance with site conditions.

3.0 RECEIPT AND HANDLING OF THE RETAINING WALLS ON SITE

1. Time and place of off-loading should be agreed before the delivery vehicle arrives at site. For safety, all units are delivered on their side. The units when off-loaded should be placed on timber bearers and checked to ensure there is no damage to the edges of each unit. The Retaining Walls must be stored individually and not stacked on top of each other.

2. Off-loading should take place at the nearest hard standing area to the point of installation.

3. Off-loading must be carried out using appropriate certified lifting equipment, chains of the correct length for the angle of lift and the correct lifting devices for the cast in lifters. It is recommended that telescopic handlers or equivalent with forklift toes are used to off-load on site. Site can offload using forklift toes as long as they use the chains and offload units individually (not pallet offload).

4. Retaining Walls are supplied with 2 lifting anchors cast in the side of the unit and 2 holes cast through the vertical wall of the unit. Lifting devices such as clutches or screwed in loops are attached to these anchors and standard 2 legged chains (or an approved lifting beam) must be used to lift and transport the units on site. The minimum angle between each chain and the horizontal surface of the Retaining Wall is 60°.

CORRECT ANGLE

INCORRECT ANGLE

INCORRECT ANGLE

5. Carefully inspect units during off-loading to verify that products are undamaged and comply with the order placed. Two types of check are required:
   Visual: Inspect the Retaining Wall for any sign of damage, including cracked or chipped concrete, or damage that could affect the performance of the product.
   Design: Check that the item received is the one ordered and that the correct quantities have been delivered.

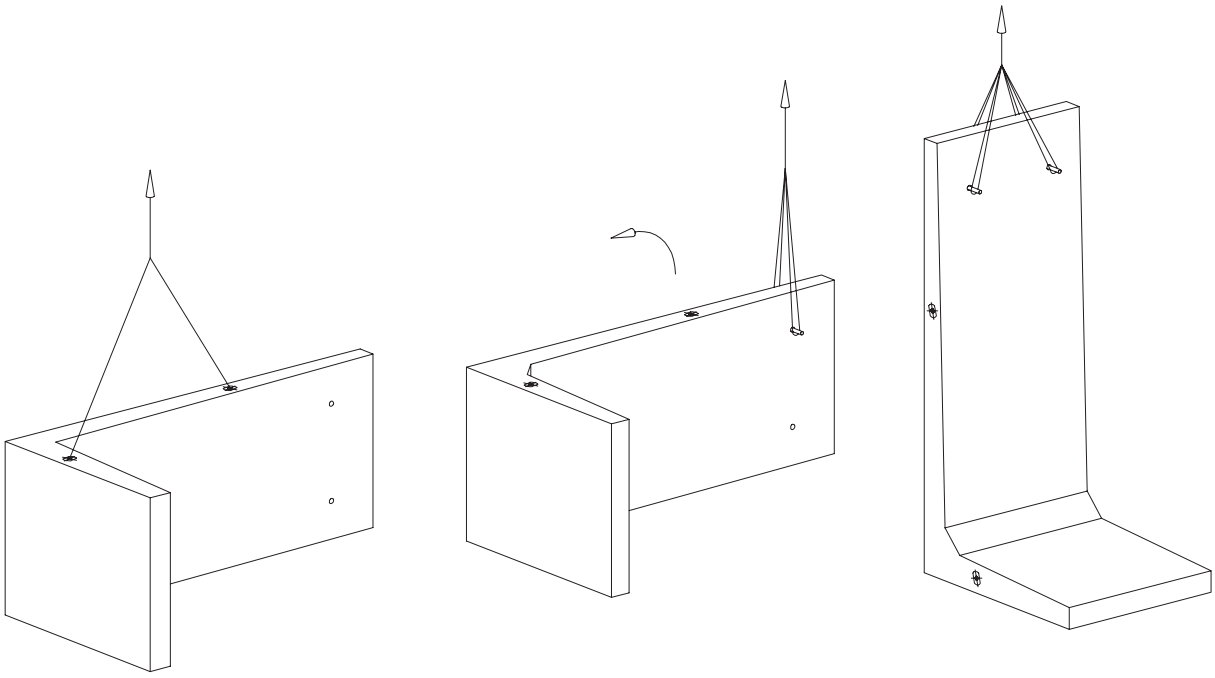
6. Photographs of QA issues should be taken before the product is offloaded and reported to the sales office immediately. Any unit that is rejected on site should be labelled and stored separately with the discrepancies for each noted on the delivery docket and reported for further action.

4.0 INSTALLATION OF PRECAST CONCRETE RETAINING WALLS

1. Attach a standard 2 legged chain set (or an approved lifting beam) to the 2 lifting points provided in the side of the Retaining Wall to transport the unit to the location where the unit is to be pitched from the horizontal to the vertical position. Each retaining wall is manufactured with 2 lifting holes cast into the top of the unit.

2. Insert an approved and tested lifting pin into the uppermost lifting hole and attach a single leg chain to pitch the unit to an upright position. (the unit must not be transported on site with 1 lifting pin)

3. FP McCann would recommend that the Retaining Walls be pitched onto bags of sand, to prevent damage occurring to the base or corner of the unit during pitching. If sand bags are not available then the unit must be pitched onto timber bearers to minimise damage to the units caused by operatives that are not used to handling this type of unit.



De-Mould and Transportation Diagram (nts)

Turning and Site Handling Diagram (nts)

4. Slowly pitch the unit to the vertical. Once in the upright position insert another lifting pin into the second lifting hole cast into the top of the unit and attach a standard 2 legged chain set to the 2 lifting pins, this allows the unit to be lifted vertically into its final point of installation.

5.0 LINE AND LEVELLING UNITS

1. Check that the foundations are level, any errors in the foundations will be exaggerated on the precast walls, if corrections are not made then the line and level of the wall units will be compromised.

2. The units should be bedded on a suitable high strength mortar bed and shimmed using non-compressible shims to give the correct alignment of the panels. Any excess mortar can be removed flush with the side of the walls.

3. It is easiest to start at the highest point in the foundation and far easier to shim the precast units to the correct line and level than remove concrete from the foundation. There may be slight differences in the heights of each panel as they will not be all manufactured in the same mould. Shims should be used to correctly align our units.

4. If the units are to remain permanently in position, provision is made within the base of the walls to accept a grouted anchor;

5. Drill 20mm diameter holes into the foundation using the holes cast in the units as guides. Roughen up the inside of the hole and remove any detritus.

6. Use the recommended anchor fix resin cartridge, static mixing nozzle and application gun in accordance, with the manufacturer's instruction. Inject the contents of the cartridge into the holes and drop in the B16 deformed bars. Due to the setting time of the anchorage system it is advisable to complete each hole, in turn before the resin is mixed in the nozzle as it is pumped into the next hole. Push each bar into the hole, so that it is completely encapsulated in resin and finished below the surface of the wall unit.

Anchors for Standard Conditions

Unit	Minimum Embedment		Anchor Size		
	Foundation	Unit	No.	Type	Length
	(mm)	(mm)			mm
1000	150	80	2	B16	250
1500	150	80	2	B16	250
1750	150	105	2	B16	275
2000	150	105	2	B16	275
2500	150	105	4	B16	275
3000	150	130	4	B16	300
3750	150	155	6	B16	325

6.0 BESPOKE SOLUTIONS

1. FP McCann understands that situations will arise when our standard Retaining Wall will not meet all the specific constraints of a particular contract. If this is the case then our technical team will work with the customer to come up with the solution that is best suited to their brief.