CREATIVE CONCRETE

Innovation in concrete since 1999

PRECAST UTILITY CHAMBERS

Installation Guidelines for Pre-Cast Utility Chambers & Covers

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Installation Instructions

1. PURPOSE

This manual is intended to serve as a guide for the proper installation of Creative Concrete Utility Chambers & Covers. The recommendations and guidelines presented here are intended to supplement detailed construction documents, plans, and specifications for the project.

2. RESPONSIBILITIES

Creative Concrete supports a Total Quality Management approach to Quality Assurance and Quality Control (QA/QC) in the planning, design, manufacture, installation, and final acceptance of all Utility Chambers & Covers. This approach requires the responsible party at each stage of the project to ensure that proper procedures are followed for their portion of the work. The responsible parties during the installation phase of a Utility Chamber & Cover include the Contractor, Engineer or Client Representative, and manufacturer. Their specific responsibilities for compliance are as follows:

CONTRACTOR

The Contractor is responsible for providing construction according to the contract documents, plans, and specifications for the project. The Contractor shall ensure that employees engaged in the installation of Chambers & Covers understand and follow the project plans and specifications, are familiar with the installation and methods required, and have adequate safety training.

ENGINEER OR CLIENT REPRESENTATIVE

The Engineer or Client Representative is responsible for installation review to ensure that the project is being constructed according to the contract documents (plans and specifications). The representative shall fully understand the project plans and specifications and shall perform adequate field verification checks to ensure installation is in conformance with the project requirements. The presence of the Engineer or Client representative does not relieve the Contractor of their responsibilities for compliance with the project plans and specifications.

MANUFACTURER

Creative Concrete Utility Chambers & Covers are produced by independently owned licensed manufacturers. The manufacturer is responsible for the production of Creative Concrete units in accordance with published material quality, size tolerances, installation documents, plans, and specifications. The licensed manufacturer is responsible for adherence to any project specific QA/QC requirements for the production of precast concrete units.

3. DEFINITIONS UTILITY CHAMBER

A chamber which a person can enter, or inspect, test, clear and remove obstructions in safety.

Authority	The water and/or wastewater authority or corporation who will be responsible for operation of the system and under who's authority the chamber is being constructed under.
Pre-Cast Base	Smooth finished area at the bottom of the chamber.
Chamber	The completed structure, consisting of all components (shaft, taper, top, cover, lid) fixed in position.
Channel	Through the access chamber base, constructed 'on grad' with the pipeline.
Drawings	Drawings issued by the authority which detail the construction requirements.
Installer	Any person or company who is responsible for the building of access chambers.
Supplier	A manufacturer or supplier of Pre-Cast Concrete Chambers

4. PRE-CONSTRUCTION CHECKLIST & SAFETY

Before you commence installation of Utility Chambers & Covers, take the time to complete necessary planning and preparation. This process will help ensure a safe, efficient, and quality installation.

If you are unsure about your responsibilities, please refer to the HSA Website.
The notes below and design details, potential hazard/ risks are identified and should be assessed accordingly by the main contractor and their design team prior to any site works commencing.
The Creative Concrete TDS should be read in conjunction with all other relevant drawings from the contract design team e.g. Engineers, M&E sub-contractors.

REVIEW THE PROJECT PLANS
Take the time to review and understand the project plans and specifications. Ensure that the plans take into account current site, soil, and water conditions. Pay close attention to silty or clayey soils and ground water or surface water on the site as these can significantly increase the forces on the excavation. A pre-construction meeting with the design engineer, construction inspector, contractor, and Client or Client representative is recommended.

CONSTRUCTION PLANNING

Develop a plan to coordinate installation activities on your site. Ensure your plan specifically addresses how to control surface water during construction.

UTILITY LOCATION

Ensure to have underground utilities located and marked on the ground before starting any installation. Contact your local utility provider to schedule utility marking for your project site if required.

MATERIAL STORAGE

Store Creative Concrete Chambers & Covers in a location close to the proposed installation area. Chambers & Covers should be kept clean and mud free. Chambers & Covers should also be stored in a location which will minimise the amount of handling on the project site. Be careful where you stockpile excavation and backfill material. Do not stockpile material over buried utility pipes, cables, or near basement walls which could be damaged by the extra weight.

HANDLING "HAZARD"

a) Volume/Weight (based on individual weight): See individual unit TDS - (+5% is recommended for sizing lifting equipment)
b) All lifting points shall be used where provided.
c) Anchor Recesses to be filled by others on site
d) Site Lifting: Lifting Loops where applicable
e) Refer to individual unit TDS for anchor location and setting out.

5. LIFTING EQUIPMENT

Make sure you have the appropriate equipment to lift Chambers and install the units. Chambers are quite large and heavy. Ensure excavators and other construction equipment are appropriately sized to handle the Chambers safely.
Creative Concrete units should be lifted using only the lifting equipment noted: Where lifting sockets are provided, appropriate lifting loops should be used for installation. **Note, Lifting Loops are for lifting only, not transportation.** Lifting loops should be replaced when wire or thread becomes worn or damaged. Where lifting sockets are not provided, round lifting slings or chains should be used for installation.

EXISTING UTILITIES

It is the responsibility of the Developer and/or designer to obtain all current information on the location of other existing utility or service providers' apparatus prior to the design being carried out. During installation, due diligence should be used when making excavations for Water Mains and service connection and care shall be taken to protect and support all existing services (water, gas, telecommunications, drainage, electricity, etc.) and other works so as not to interfere with the working arrangements and integrity of such utilities.

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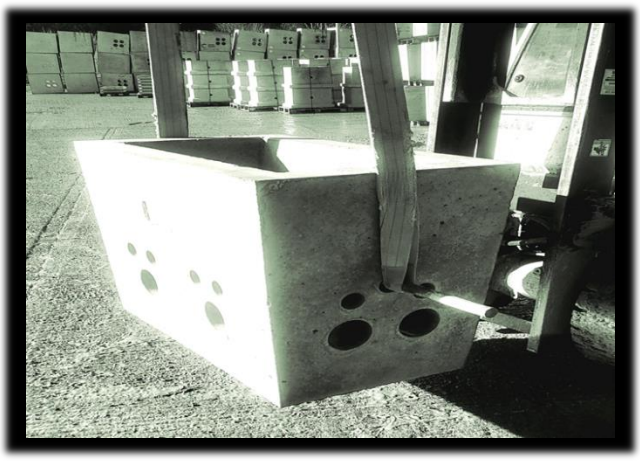
Chambers with Lifting Sockets:

Unit Description	Required Lifting Loops	Quantity of Lifting Loops	Safe Working Load (kg)
Mini Pillar Chamber	M16	2	>1200
Bulk Water Chamber	M20	4	>2000
Bulk Water Chamber Cover	M20	4	>2000
Air Valve Chamber	M12	2	>500
Sluice Valve Chamber	M12	2	>500
Fire Hydrant Chamber	M12	2	>500
Florite Inspection Chamber	M12	2	>500
SV & FH Cover	M12	2	>500
Universal Riser	M12	2	>500
Comms I Chamber	M16	4	>1200
Comms I Cover	M16	4	>1200
JB 107	M16	4	>1200
JB 104 Chamber	M16	2	>1200
Heat Pump Base	M12	2	>500
Protection Cover	Pin Anchor Ring Clutch	2	>2.5T
Lego Blocks	Pin Anchor Ring Clutch	2	>2.5T

Chambers without Lifting Sockets:

Unit Description	Required Sling	Safe Working Load (kg)
Micro Pillar Chamber	Round Lifting Sling or Chains	>2000
JB4 Chamber	Round Lifting Sling or Chains	>2000
JB4 A Chamber	Round Lifting Sling or Chains	>2000
JB 5 Public Lighting Chamber	Round Lifting Sling or Chains	>2000
JB 104 Chamber	Round Lifting Sling or Chains	>2000
FW3 Chamber	Round Lifting Sling or Chains	>2000
FW6 Chamber	Round Lifting Sling or Chains	>2000
COMMS II Chamber	Round Lifting Sling or Chains	>2000
COMMS III Chamber	Round Lifting Sling or Chains	>2000
JB 6 Chamber	Round Lifting Sling or Chains	>2000
JB 160 Chamber	Round Lifting Sling or Chains	>2000



6. EXCAVATION & BASE

Minimum dimensions
The excavation and ground support must be a minimum 300mm clearance on all sides of the chamber.

Over excavation
Where an excavation is deeper than that specified, the Installer must replace the excessive excavation with minimum 20N concrete, crushed rock or stabilized crushed rock type SR, as directed by the Engineers or Design Team before proceeding with the installation. Precast units must always be placed on a flat, firm supporting surface.

PRECAST BASE

Precast base components may incorporate factory-formed openings or alternatively openings may be formed on site using a core drill.
Jointing of pipelines to the precast base must be done using either epoxy mortar or for verified clay pipelines of epoxy mortar may be replaced by type SR, grade 25N concrete provided that the concrete fills any void between the component and pipe and extends to the first joint in the pipeline.

Care must be taken to ensure:
• Correct lifting equipment and procedures are used
• Steps (if used) are correctly oriented and in line with each other
• Ensure jointing mastic or rubber sealing rings are placed correctly in accordance with manufacturer's instructions.

A component to be jointed should be lowered into position slowly, ensuring contact is made all around, uniformly on the base. It is useful to hold the component to be jointed slightly above the one in position, to allow steadying prior to placement. After placement, it should be checked that the components have joined evenly and in accordance with the Design specifications.

7. BACKFILLING

Suitable material for backfilling around the utility chamber must be used for backfilling the pipeline. The backfilling material must be placed evenly around the circumference of the access chamber and compacted ensuring that the components and joints are not displaced. Backfilling may be performed either after the cover unit is installed or after each component is installed. Care must be taken to ensure uniform compaction is achieved around the access chamber. No uneven side loads or construction traffic loads should be allowed to be applied. The backfilling operation should be completed with the aim of minimal or no subsidence of the fill material after completion of the works

8. ASSEMBLY OF COVERS & FRAME

The cover must be assembled and jointed in accordance with the requirements of the governing body's instructions, jointing surfaces must be clean and free of unacceptable defects and damage before making the joint.

Check to ensure that the cover selected will result in the installation being completed to the required finished level. Class B Solid Engineering Brick set in M30 Mortar may are used to raise the cover to the desired level. (as outlined in the governing body's standard detail) Refer to the Cover & Frame manufacturer for information as to available components.

Care must be taken to ensure:

- Correct lifting gear and procedures are used
- Steps (if used) are correctly oriented and in line each other
- Jointing mastic or rubber sealing rings are placed correctly in accordance with the governing body's instructions. Typically Covers are set in Cementitious Epoxy resin/Polyester Mortar 30N/mm2

The Cover & Frame to be jointed should be lowered into position slowly, ensuring contact is made all around, uniformly. It is useful to hold the component to be jointed slightly above the one in position, to allow steadying prior to placement. After placement, it should be checked that the components have joined evenly and in accordance with the specifications.

STEPS & LADDERS

Steps or ladders where used, must be located and fixed in accordance with the authority's requirements and drawings. Steps, where used shall be installed in chambers in a controlled environment at the manufacturers factory, installation of steps in chambers on site is not recommended, but can be installed on site