

CPM Technical Guide / Load Configuration



Technical Summary

In order to assist our customers in their preparation for off-loading our products from the delivery vehicle, the following information is given to show how the loaded vehicles could arrive on your site(s) and guidance on the types of lifting equipment used to off-load the products.

This information does not however create a non-requirement by the customer to provide a site specific risk assessment, including the safe off-loading of CPM products without the customer complying with statutory Legislation.

The loaded diagrams represent the aerial views of the loaded trailers and the various products the customer may have ordered. These drawings are not to scale but do give a true definition of how they may look.

Information is given on the type(s) of lifting equipment that may be required, along with the type(s) of handling equipment CPM Group Ltd use on each of their manufacturing sites.

All lifting processes must be assessed before the task begins. Site Specific Risk Assessments, Safe Working Practices, Method Statements along with the provision of training and competency is the responsibility of the customer.

If any unloading processes are undertaken by any employee or representative of CPM Group Ltd. Then a Method Statement shall be installed along with the relevant instruction, information, guidance and provision of training and competency.

Please Note:

Access to vehicles may be required to attach lifting chains and /or lifting pins to the products. 'Side Fall Protection systems' on our delivery vehicles are available. This is to allow safe access while working on the vehicle bed.

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CPM Group / Health and Safety Guide

1.0 Introduction

This guide is intended for use by persons responsible for the safe delivery and unloading of vehicles which transport precast concrete drainage products to our customers; either on construction sites or merchant's yards. It also gives clear indications of the scope of responsibilities before, during and after the products have been delivered, and two Appendices gives helpful advice for achieving a safe working practice.

This guide also acknowledges the comprehensive information published by the HSE, information sheet WPT06 'Delivering safely: Co-operating to prevent workplace vehicle accidents' and advises reads to familiarise themselves with its contents.

It is available for download at:<http://www.hse.gov.uk/fallsfromvehicles/wpt06.pdf>

2.0 Prior to delivery

There are three key 'Dutyholders' in the delivery process, and all have responsibilities to ensure that safe operations and safe control measures are installed before, during and after the process of delivering and unloading takes place.

- Supplier
- Haulier (Delivery)
- Recipient

Health and Safety legislation places a requirement for co-operation between these dutyholders and for all dutyholders to assess delivery and collection risks.

3.0 Delivery

- The products will be secured and restrained safely prior to leaving any CPM Group Ltd factory using the recommended and approved securing systems.
- The products will be delivered in a safe manner under the responsibility of the carrier, and he/she will abide by any 'Site Specific Rules' present on any site as given by the recipient.
- Upon arrival at a delivery location, it is the driver's decision as to where he can manoeuvre the vehicle, and it is his/her right to point out to the recipient of the goods any concerns that they may have about the chosen unloading area.
- The driver will wear all the appropriate Personal Protective Equipment (PPE) as designated by both his/her company, and CPM Group Ltd. Also as ruled by the recipient site specific rules, before loosening any straps and securing devices.
- If the driver is responsible for off-loading his/her vehicle by means of 'Lorry Mounted Crane'. Then this must be organised at the 'Order stage' with specific information requested by the customer.
- The driver (If responsible for off-loading) will have all the necessary training and certification for all the lifting equipment, including personal certification for operation. (Before the task begins)
- The unloading of the delivery vehicle will have a safe and secure vehicle bed, and the installation of 'Side Fall Protection' systems pre-installed prior to off-loading.

CPM Group / Health and Safety Guide

4.0 Recipient

- The 'Unloading/Delivery areas must be made good by the customer as per the order stage and pre-site preparation for deliveries.
- The customer must ensure the safety of the driver whilst he/she is on their site.
- Unless the delivery is made with a 'Lorry Mounted Crane' whereby the driver operates the crane. It must be the recipients duty to off-load the products from the vehicle bed. If requested, the vehicle bed will have 'Side Fall Protection Systems' in place before unloading takes place.
- The driver, if he/she has no part to play in the off-loading process, must be made safe, either with instruction to stay in the cab, or to move to a designated safe area.
- No product must be lifted above and over the cab at any time.

The customer must check everything in connection with both the delivery, and the off-loading, including certification is acceptable before commencing the unloading task.

5.0 Summary

The manufacturers of pre-cast products undertake through their hauliers to deliver their products in a safe and secure manner

The recipients of such deliveries have a responsibility to ensure that they have full knowledge of all aspects of the deliver and to have carried out all their obligations to make sure that the off-loading operation is carried out safely with minimal risk to all parties involved in the task.

The manufactures are available to advise further general handling of the products, specialised lifting equipment and any other aspects of their products.

Side Vehicle Protection Systems



Side Rail Protection

- This system is available on both 'Rigid' and 'Articulated' vehicles.
- Access and egress via fixed ladders on vehicles.
- Allows Safe working on the vehicle bed.



Side 'NET' Fall Protection

- This system is available on both 'Rigid' and 'Articulated' vehicles.
- It is designed to allow Safe working on the vehicle bed with limited restrictions.
- It will 'Reduce the risk of injury should a fall occur'. (Health & Safety at Work , Working at Height).

Safe Handling



Lifting Pin Inserting Tool

In order to avoid the need to access the vehicle, CPM Group have designed a simple tool to insert the lifting pins from 'Ground Level'.

This tool can be used on most 'Manhole Chambers', especially large rings which overhang the vehicle (Wide Load).

It can also be used in conjunction with the 'Side Net Fall Protection System' if access to the vehicle is required.



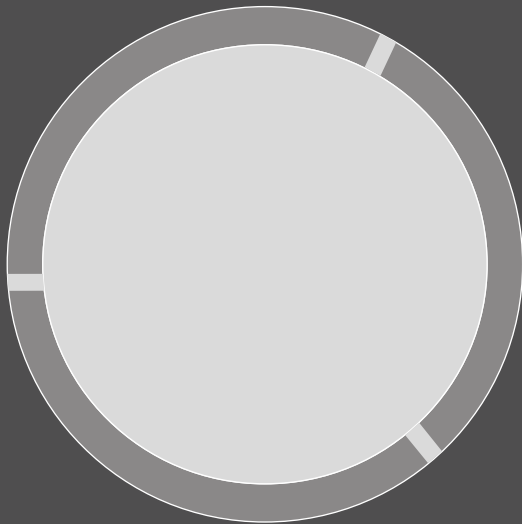
Load Configuration / Manhole Chambers

Ariel layout example of how manhole chambers could be delivered on vehicle bed.



Manhole Size / Weight		Lifting Equipment (CPM Group Ltd)	
Dimensions / MM	Weight Metre / depth (KG)	Mechanical means of off-loading	
900	530	<p>'Scanlift' gravity lock grab system.</p> <p>'Two' or 'Three' grab attachments and can be used as shown above, for sizes 900mm diam up to and including 3000mm diameter Manhole Chambers.</p> <p>This system eliminates the need for any operative to access the vehicle bed therefore reducing the risk of a 'Fall from Height'. However, side rail protection systems on the vehicle may be used to allow access if required.</p> <p>Please Note: This attachment can be supplied with a 'Crane – Off-Load' vehicle at extra cost. Notification to our sales team must be made in advance.</p>	
1050	710		
1200	912		
1350	1080		
1500	1330		
1800	1760		
2100	2140		
2400	2740		
2700	3400		
3000	4140		
3660	5300		
4000	6360		

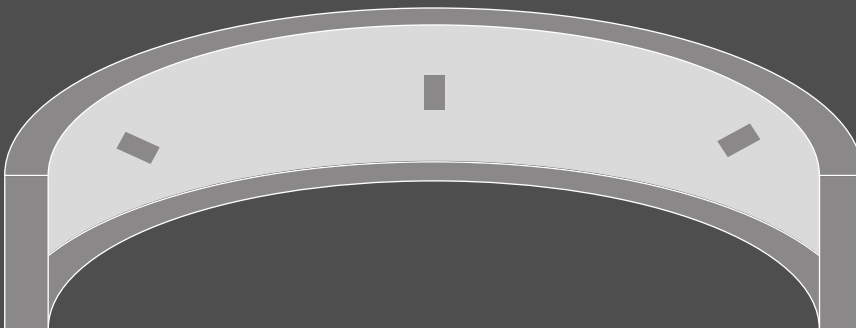
Diagrams for Manhole Chambers



3660MM Diameter chamber ring.

All manhole chamber rings up to and including 3660mm diameter has three lifting holes at 50mm diameter each to take lifting pins for handling.

Each lifting pin has a SWL capacity of 2.5 tonne and comes complete with test certificate.



4000 MM 'Half Section Manhole Chambers.

These are cast in two half's and can be handled with the Lifting Pins described above.

They have three lifting points per half section. And when joined together they can be lifted as a full ring from four equal distant lifting points using a four hook lifting chain (Four Leg).

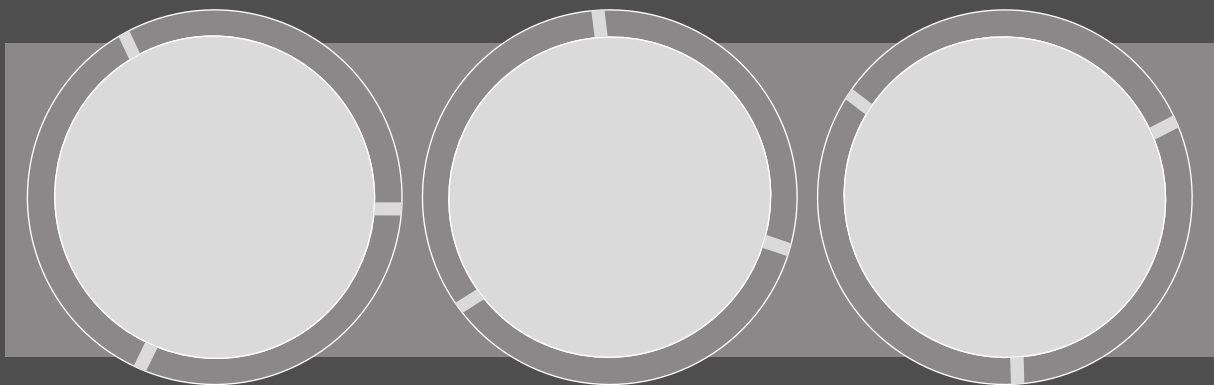
Photo shows how they are handled on CPM Sites using the specially designed 'Grab Beam'



Load Configuration / Manhole Chambers

3660MM Diameter chamber ring configuration ring on loaded vehicle

Top elevation on a forty foot trailer showing position of rings and lifting points.
This drawing is not to scale but for reference only.

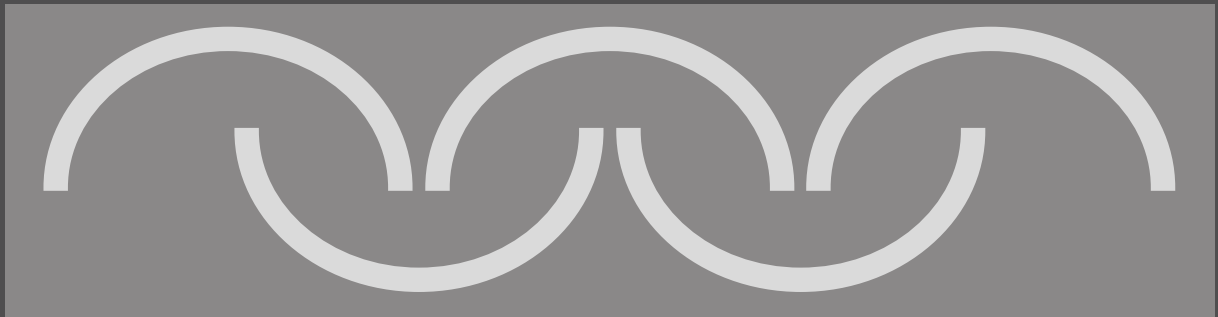


The rings are positioned on the trailer where a reasonable access to the lifting pins is achievable by using the pin locating tool (shown in previous photo) (ADD) The lifting pins can be pre-inserted at our depots but will require a double check for security before lifting. This will mean multi-sets of lifting pins being provided for each ring. These can be returned after use. Each set comes complete with Test Certification with SWL. of 2.5tonne

- Weights of units: 1mtr deep = 5.3tonne 750mm deep = 4.0tonne Weights of units: 1mtr deep = 5.3tonne 750mm deep = 4.0tonne
- Each unit has three lifting points
- These units are loaded at CPM depots using mechanical means with a 'Star Beam' (3 point scissor grab system)
- Lifting pins are available, each with a SWL of 2.5tonne.

The alternative to this method of lifting is by CPM supplying a 'Star Beam' (3 point scissor grab system At extra cost) as used at CPM depots. Test certificates are provided for all lifting equipment.

Load Configuration / Half Sections



Half Sections

Access to the trailer is required to insert lifting pins.


Site risk assessments, Safe Working Practices, and Method Statements must be installed before any lifting operation begins.

Side Rail Protection systems may be used to allow safe access to the trailer along with the 'Lifting Pin Locating Tool.

Load Configuration / Mixed Cover Slabs

Ariel layout of how a load of mixed size cover slabs could be delivered on the vehicle bed.



Manhole Size / Weight		Lifting Equipment (CPM Group Ltd)	
Dimensions / MM	Weight / (KG) 675sq	Mechanical means of off-loading	
900	130	 <p>Cover Slabs up to 1800mm diameter can be handled on site by using fork lift attachments consisting of forks at 5'0 in length (Usual Standard Length).</p> <p>If access is required to the vehicle bed, 'Rail Side Protection vehicles may be used.</p> <p>Please Note: 4000mm diameter cover slabs are cast in two halves. The weights opposite are the total weight of the full diameter.</p>	
1050	235		
1200	355		
1350	505		
1500	790		
1800	1210		
2100	1745		
2400	2375		
2700	3380		
3000	4590		
3660	7760		
4000	10040		

Load Configuration / Cover Slabs

Image 1.0



Image 2.0



Image 3.0



Image 1.0 / Large cover slabs are loaded with full length timbers in between each unit.

All Cover Slabs have three lifting points as standard (More lifting points can be cast in at customer request). Standard cover slabs have cast in bars to take standard lifting hook or cast in 'Deha' anchors to be handled with 'Deha' lifting clutches

Image 2.0 / 3660mm Diameter Cover Slab with 750 x 600 access.

Also showing the three lifting points.

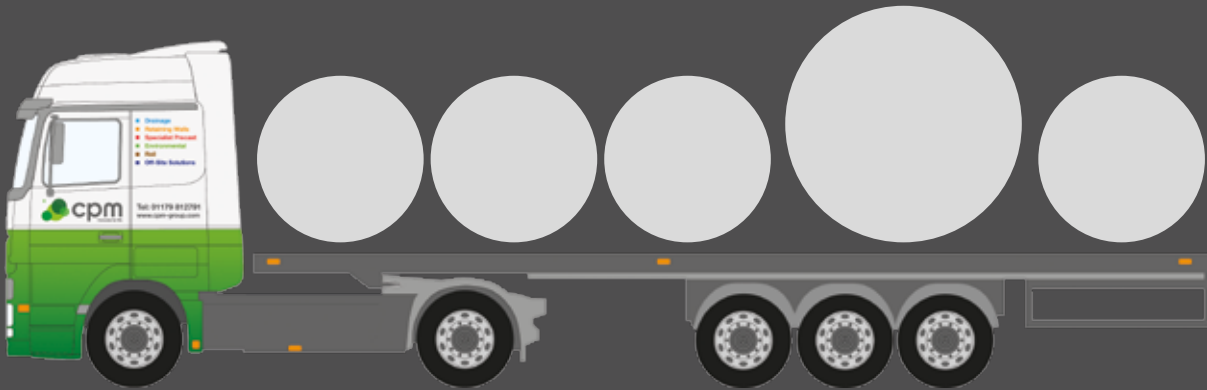
Image 3.0 / 4000mm Diameter Cover Slab (half section).

Also showing the three lifting points.



Access to vehicle bed may be required. If so a 'Rail Side Protection' vehicles may be supplied.

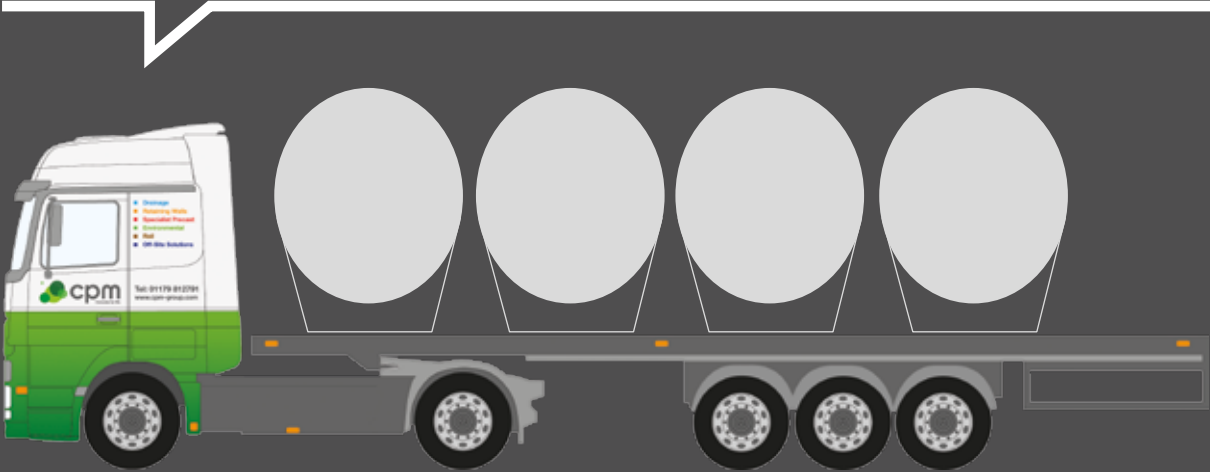
Load Configuration / Flexible Pipes



Configuration of how the loaded Flexible Pipes may look on the delivery vehicle.

Flexible Pipe Size / Weight		Lifting Equipment (CPM Group Ltd)	
Dimensions / MM	Weight / (KG)	Mechanical means of off-loading	
225	100	  <p>Flexible pipes can be handled using fork lift truck with fork attachments to reach over centre the maximum length of the pipe (2500mm) and designed to lift the weight of the pipe required.</p> <p>They can also be handled by using the 'Pipe Lifter' which is for higher, and attaches to the excavator on site. (Information available and given at the point of order).</p> <p>Web Slings may also be used and passed through the 'barrel' of the pipe from ground level. The web sling must have protectors and be of the correct length to comply with lifting angle guidance.</p>	
300	217		
375	501		
450	671		
525	872		
600	1142		
675	1235		
750	1440		
750 (Unreinforced)	1924		
825	1513		
900	1853		
900 (Unreinforced)	2991		
1050	2495		
1125	3130		
1200	3266		
1350	4349		
1500	4970		
1600	5361		
1800	6794		

Load Configuration / Ovoid Pipes



Configuration of how the Ovoid Pipes may look on the delivery vehicle.

Ovoid Pipe Size / Weight		Lifting Equipment (CPM Group Ltd)
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Dimensions / MM	Weight / (KG)	Mechanical means of off-loading
400	880	Ovoid pipes are handled similarly to standard Flex Pipe. Using 'Pipe Lifter' or 'Web Sling' technique described in handling Flex Pipes. (ADD)
600	2130	
800	3300	



Load Configuration / House Inspection Covers

Ariel layout example of how house inspection cover slabs would be delivered on the vehicle bed.



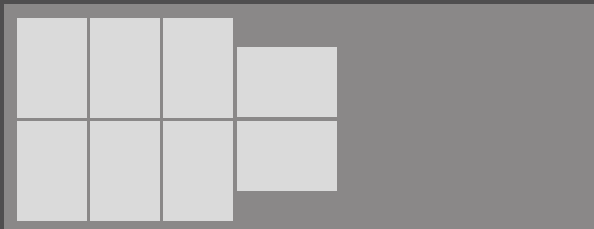
Rectangular Manhole Size / Weight

Dimensions / MM	Weight / (KG)	No Per Pallet	Total Weight / (KG)
845 x 680	46	10	1010
860 x 710	67	10	2020



Load Configuration / House Inspection Chambers

Ariel layout example of how house inspection chambers would be delivered on the vehicle bed.



Rectangular Chamber Units Manhole Size / Weight

Dimensions / MM	Depth (MM)	Individual Weight / (KG)	No Per Pallet	Total Weight / (KG)
650 x 500	150	44	32	1410
650 x 500	225	58	20	1160
650 x 500	300	86	16	1380
810 x 660	150	67	16	1070
810 x 660	225	100	10	1000
810 x 660	300	134	08	1070
1065 x 740	150	83	16	1330
1065 x 740	225	130	10	1300

Load Configuration / Sealed Manhole



The load configuration of the Sealed Manhole Units is similar to the Chamber Rings

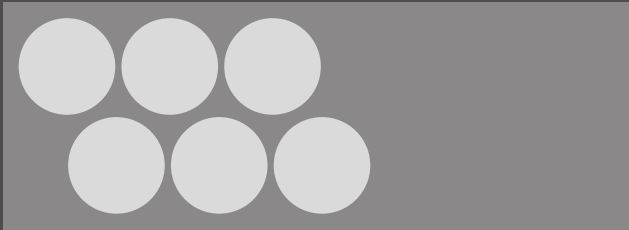


Photo showing 'cast in' DEHA anchor pin on the side of Manhole unit.



DEHA lifting link Connected to cast in anchor pin on Cover Slab. (In accordance to the manufacturer's guidance specification)

Sealed Manhole / Continued



Two examples of handling 'Palletised' Sealed Manhole Units using mechanical means.

Rail Side Protection Vehicles may be used to allow access to the vehicle bed for safe attachment of the lifting equipment using the 'Deha Lifting Clutches and Web Slings'

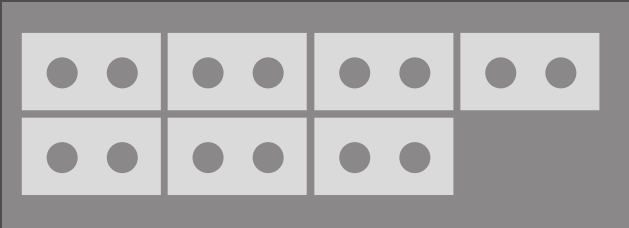


1200 mm diameter
Sealed Manhole Base Unit



1500 mm diameter
Sealed Manhole Base Unit

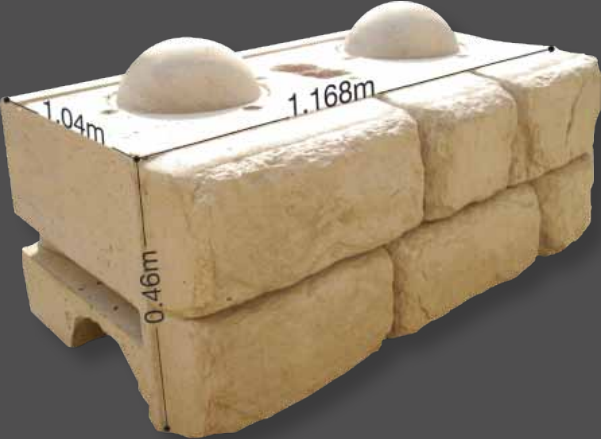
Load Configuration / Redi-Rock



Ariel layout example of how Redi-Rock blocks would be delivered on the vehicle bed.



This product can either be off-loaded using adjusted forks to slide down each side of cut-out, or by using a single drop down chain and lifting hook to the designed lifting capacity complete with test certificates.



1134 KG

Complete UK Coverage

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