

Quay Loadings Matrix

Last Updated - 04/03/2019

Location	UDL (T/m ²)	Point Load Crane Outrigger Load	Heavy Lift	Design Crane
Albert Quay (BP & Total)	4	50T on a 1x1m Pad or 100T on a 2.5x2.5m Pad	2N° 250T on a 1x1m Pad. Size 25m x 18m	
Albert Quay East	2.7			
Albert Quay West				
Atlantic Wharf	3	50T on a 720mm dia Pad (Deck slab), 50T on a 1x1m Pad (Deck Slab), or 50T on a 2.4m length of crane rail		
Blaikies Quay	2.5	<u>see quay analysis</u>		
Blaikies Quay East	1	<u>see quay analysis</u>		
Clipper Quay	4	<u>see quay analysis</u>	see quay analysis	Demag Gottwald HC300
Commercial Quay East	3	<u>see quay analysis</u>		Gottwald HMK170 EG
Commercial Quay West Eurolink	3	<u>see quay analysis</u>		
Commercial Quay West		<u>see drawing 171037-02 (B)</u>		
Pacific Wharf HLP	5	<u>see quay analysis</u>	see quay analysis	
Duthies Quay	4	<u>see quay analysis</u>		Demag Gottwald HC300
Halls Quay	4	<u>see quay analysis</u>		Demag Gottwald HC300
Jamieson Quay	4	50T on a 1x1m Pad		
Matthews Quay North	4	<u>see quay analysis</u>	see quay analysis	
Mathews Cross Berth	4	<u>see quay analysis</u>		
Mearns East	3			
Mearns West	3	50T on a 1x1m Pad	118.5T on a 0.8x0.8m Pad. Size 10m x 10m	
Pacific Wharf	3	<u>see quay analysis</u>		
Palmerston Quay	2			
Pocra Quay	2.7	<u>see quay analysis</u>	see quay analysis	Jones 2200 HLB
Pocra Base	3			
Pilot Jetty	2.7	50T on a 1x1m Pad		
Point Law Cross berth	3			
Point Law North	3	50T on a 1x1m Pad		
Point Law South		HGV Traffic only		
Regent Quay East	2.5	<u>see quay analysis</u>		
Regent Quay West	2.5	50T on a 1x1m Pad		
Passanger Ro-Ro				
Russells Quay	4	<u>see quay analysis</u>		
Trinity Quay	2.5			
Telford Jetty				
Torry Quay 3-6	5	100T on a 1.5x1.5m Pad	115T 1.5x1.5, 134T 2x2, 169T 3x3, 203T 4x4 Size 60m x 30m	Gottwald HMK170 EG , Leibherr 100,120, & 180
Torry 2	3			
Torry 1 *	1.5		*Restricted outrigger loads	
Upper Quay	2.5			
Victoria Dock (The Cut)	2.4			
Waterloo East	2.5	30T on a 0.6x0.6m Pad		
Waterloo Cross Berth				
Waterloo West	2.5			

REFER TO AHB Tel: 01224597000

Arch Henderson LLP 141095
Permissible Crane Loading Disclaimer

Permissible crane loadings as advised by Aberdeen Harbour Board.

Aberdeen Harbour Board place limits on the size of permissible point loads (outrigger loads) and permissible uniformly distributed load to prevent damage and ultimately failure of structures throughout the harbour. Each must be complied with dependent on the nature of the loading, these loading scenarios should not be confused.

When a specified outrigger point load with accompanying pad size has been provided by Aberdeen Harbour Board to the entity which in turn will be communicated to their competent person, who is referred to as the "Appointed Person" under the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER), this information will represent the Maximum outrigger load that can be applied on that size of pad and details a specific loading scenario that the quay structure has been designed to resist. The specified load and pad size should not be extrapolated to determine a larger size of pad with higher load (i.e. if 100T on a 1x1m pad has been specified this should not be extrapolated to give a permissible point load of 200T on a 2x1m pad). If a pad size larger than the biggest pad (with associated point load) as advised by Aberdeen Harbour Board is determined to be required, the pressure exerted at the underside of the pad must not exceed the '*design uniformly distributed load on the quay*', unless this has been analysed by a qualified Engineer and accepted by Aberdeen Harbour Board.

Lift supervisors must be competent and be aware of the differing types of permissible loads that can be applied and that these loads are appropriately applied to ensure that they are not exceeded by the crane used on the day of the lift and shall comply with the lift plan.

Structures throughout Aberdeen Harbour differ in construction and load capacity, often with no obvious visible indications. Lift supervisors must ensure that the crane is set up on the specific berth determined for the lift and that the lift complies with the permissible loads for that berth. If this is not possible a new lift plan shall be drawn up taking account of the permissible loading applicable to the new lift location.

In conjunction with LOLER 1998, BS 7121 Code of Practice for the Safe Use of Cranes, loading information as supplied by Aberdeen Harbour Board and the above will allow crane companies, hirers of cranes and working parties to carry out their work safely within Aberdeen Harbour.

The structures are assumed to be in good condition with levels of corrosion that would be expected within the design life of the structures. Structures should be regularly inspected and any signs of accelerated corrosion or other defects identified for further analysis and repair.

Aberdeen Harbour Board
Quay Loading Analysis – Results Summary

Structure Ref:	Siberia Quay						
Structure Type:	Suspended deck – on bearing piles. Larssen 6 and box piles						
Design UDL	50 kN/m ²						
Date built	1981						
Outrigger Load (Tonnes)	Spreader Pad Size (m)	0.68m diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Maximum outrigger load	tba	100 T	120 T	190 T	190 T	190 T	190 T

Notes

1. Aberdeen Harbour Board Permissible Crane Loading Disclaimer should be read in conjunction with this table.
2. A 1.3 dynamic factor has been incorporated in the above calculated maximum outrigger loads.
3. No outriggers should to be placed on manholes or duct covers.
4. At ducts and chambers the outrigger should be placed away from the duct or chamber edge at a distance equal to the depth of the duct/chamber.
5. All outriggers are assumed to be placed on a competent concrete slab with the base of the outrigger in full contact with the ground. If this is not possible the outrigger should be relocated.

Structure Ref:	Commercial Quay West (Middle)						
Structure Type:	Solid quay, Larssen 5 sheets and boxes. New relieving platform with counterforts and bearing piles.						
Design UDL	30 kN/m ²						
Date built	Strengthened 2003						
Outrigger Load (Tonnes)	Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Maximum outrigger load		28 T	50 T	105 T	130 T	125 T	140 T

Structure Ref:	Commercial Quay West (East)						
Structure Type:	Solid quay, Frodingham 5 sheetpiles. New Relieving platform with bearing piles.						
Design UDL	30 kN/m ²						
Date built	Strengthened 2010						
Outrigger Load (Tonnes)	Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Maximum outrigger load		27 T	50 T	110 T	130 T	130 T	145 T

Notes

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3. No outriggers should to be placed on manholes or duct covers.
4. At ducts and chambers the outrigger should be placed away from the duct or chamber edge at a distance equal to the depth of the duct/chamber.
5. All outriggers are assumed to be placed on a competent concrete slab with the base of the outrigger in full contact with the ground. If this is not possible the outrigger should be relocated.

Structure Ref:	Telford Dock – Clippers Quay / Duthies Quay / Halls Quay / Russells Quay. (Excluding dry dock area)						
Structure Type:	Solid quay, Larssen 6 sheetpiles, relieving platform						
Design UDL	40 kN/m ²						
Date built	1992						
Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m	
Outrigger Load (Tonnes)							
Maximum outrigger load	27.5 T	48 T	80 T	110 T	110 T	135 T	

Structure Ref:	Telford Dock – Clippers Quay – Heavy Lift Platform						
Structure Type:	Solid quay, Larssen 6 sheetpiles, relieving platform						
Design UDL	40 kN/m ²						
Date built	1992						
Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m	
Outrigger Load (Tonnes)							
Maximum outrigger load	80 T	95 T	125 T	155 T	155 T	175 T	

Notes

1. Aberdeen Harbour Board Permissible Crane Loading Disclaimer should be read in conjunction with this table.
2. Refer to Aberdeen Harbour Board for location restrictions on Russells Quay and Duthies Quay adjacent the Telford Jetty.
3. A 1.3 dynamic factor has been incorporated in the above calculated maximum outrigger loads.
4. All outriggers to be placed a minimum of 1m from the rear of the cope.
5. No outriggers should to be placed on manholes or duct covers.
6. At ducts and chambers the outrigger should be placed away from the duct or chamber edge at a distance equal to the depth of the duct/chamber.
7. All outriggers are assumed to be placed on a competent concrete slab with the base of the outrigger in full contact with the ground. If this is not possible the outrigger should be relocated.

Structure Ref:	Pocra Quay – Typical section – Including end bays					
Structure Type:	Suspended deck					
Design UDL	27 kN/m ²					
Date built	1982					
Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Outrigger Load (Tonnes)						
Maximum outrigger load	25 T	40 T	75 T	80 T	80 T	80 T

Structure Ref:	Pocra Quay – Heavy Lift Platform					
Structure Type:	Suspended deck					
Design UDL	50 kN/m ²					
Date built	1982					
Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Outrigger Load (Tonnes)						
Maximum outrigger load	50 T	100 T	110 T	120 T	150 T	170 T

Notes

1. Aberdeen Harbour Board Permissible Crane Loading Disclaimer should be read in conjunction with this table.
2. A 1.3 dynamic factor has been incorporated into the provided maximum outrigger loads.
3. Outriggers should not be located adjacent movement joints.
4. No outriggers should to be placed on manholes or duct covers.
5. At ducts and chambers the outrigger should be placed away from the chamber edge at distance equal to the depth of the duct/chamber.
6. All outriggers are assumed to be placed on a competent concrete slab with the base of the outrigger fully in contact with the ground. If this is not possible the outrigger should be relocated.

Aberdeen Harbour Board
Quay Loading Analysis – Results Summary

Structure Ref:	Pacific Wharf						
Structure Type:	Solid quay, Frodingham 5 sheetpiles, relieving platform						
Design UDL	30 kN/m ²						
Date built	1965						
	Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Outrigger Load (Tonnes)							
Maximum outrigger load		16 T	33 T	55 T	60 T	65 T	70 T

Notes

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2. A 1.3 dynamic factor has been incorporated in the above calculated maximum outrigger loads.
3. No outriggers should be placed on manholes or duct covers.
4. At ducts and chambers the outrigger should be placed away from the duct or chamber edge at a distance equal to the depth of the duct/chamber.
5. All outriggers are assumed to be placed on a competent concrete slab with the base of the outrigger in full contact with the ground. If this is not possible the outrigger should be relocated.

Structure Ref:	Blaikies Quay – Suspended deck West						
Structure Type:	Suspended deck - front face sheet piles						
Design UDL	25 kN/m ²						
Date built	1968						
Outrigger Load (Tonnes)	Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Maximum outrigger load		23 T	28 T	43 T	60T	-	-

Structure Ref:	Blaikies Quay – Suspended deck East						
Structure Type:	Suspended deck - front face sheet piles						
Design UDL	10 kN/m ²						
Date built	1968						
Outrigger Load (Tonnes)	Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Maximum outrigger load		15 T	20 T	26 T	32 T	-	-

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2. A 1.3 dynamic factor has been incorporated into the provided maximum outrigger loads.
3. Outriggers should not be located adjacent movement joints.
4. No outriggers should to be placed on manholes or duct covers.
5. At ducts and chambers the outrigger should be placed away from the chamber edge at distance equal to the depth of the duct/chamber.
6. All outriggers are assumed to be placed on a competent concrete slab with the base of the outrigger fully in contact with the ground. If this is not possible the outrigger should be relocated.

Structure Ref:	Matthews Quay – Heavy Lift Platform					
Structure Type:	Solid quay, Larrsen 6-42, relieving platform					
Design UDL	40 kN/m ²					
Date built	1996					
Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Outrigger Load (Tonnes)						
Maximum outrigger load	120 T	140 T	180 T	215 T	215 T	240 T

Structure Ref:	Matthews Quay – Typical section for North and East quay – excludes the south east corner with Atlantic Wharf					
Structure Type:	Solid quay, Larrsen 6-42, relieving platform					
Design UDL	40 kN/m ²					
Date built	1996					
Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Outrigger Load (Tonnes)						
Maximum outrigger load	26 T	50 T	100 T	150 T	145 T	165 T

Notes

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3. All outriggers to be placed a minimum of 1m from the rear of the cope.
4. Outriggers should not be located adjacent movement joints.
5. No outriggers should to be placed on manholes or duct covers.
6. At ducts and chambers the outrigger should be placed away from the chamber edge at distance equal to the depth of the duct/chamber.
7. All outriggers are assumed to be placed on a competent concrete slab with the base of the outrigger fully in contact with the ground. If this is not possible the outrigger should be relocated.

Structure Ref:	Regent Quay East						
Structure Type:	Open structure with sheet pile frontage - Larssen 32 box and Larssen 6 sheet piles						
Design UDL	tbc						
Date built	1984						
Outrigger Load (Tonnes)	Spreader Pad Size (m)	0.68m Diameter	1m x 1m	1.8m x 1.8m	2.5m x 2.5m	3m x 2m	3.5m x 2.4m
Maximum outrigger load		80 T	95 T	110 T	125 T	115 T	125 T

Notes

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2. A 1.3 dynamic factor has been incorporated in the above calculated maximum outrigger loads.
3. All outriggers to be placed a minimum of 1m from the rear of the cope.
4. No outriggers should to be placed on manholes or duct covers.
5. At ducts and chambers the outrigger should be placed away from the duct or chamber edge at a distance equal to the depth of the duct/chamber.
6. All outriggers are assumed to be placed on a competent concrete slab with the base of the outrigger in full contact with the ground. If this is not possible the outrigger should be relocated.
7. The structure is assumed to be in good condition with levels of corrosion that would be expected within the design life of the structures. Structures should be regularly inspected and any signs of accelerated corrosion or other defects identified for further analysis and repair.