

300sq.100H Surface Box-(Grade A)

AQuality

東恒測試顧問有限公司

AQUALITY TEST CONSULT LIMITED

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Report no. : 200511MMA-1P

TEST REPORT

Loading Test to Cast / Ductile Iron Surface Box

(Tested to BS5834 : Part 2 : 1983 Appendix A)

Customer : Cheung Hing Foundry (HK) Limited

Date Received : 11-May-2020

Address : 299 Pak Cha Tsuen, Kung Um Road, Yuen Long, N.T.

Date Tested : 14-May-2020

Project : -

Customer Code : C120

Site Code : -

Sample Information Provided by Customer :

Sample Description : 300 Square Ductile Iron Surface Box

Grade : Grade A

Clear Opening : 300 mm

Test Results

Lab. Sample No.	200511MMA-1P/1
Customer Sample No.	-
Size of Test Block (diameter) mm	300
<u>Loading Test</u>	
Applied Test Load (maintained for 30 sec.) kN	233.1
Observation	NCF
Compliance#	Passed
Mass kg	Cover : 13.3 Frame : 13.0

Legend :

FAC -- Fracture at cover / grating

FAF -- Fracture at frame

NCF -- No Visible Fracture

Remarks :

- 1) Test result related to the sample tested only.
- 2) Manufacturer: Cheung Hing Foundry (HK) Limited; Country of Origin: China; Brand: CHF
- 3) Frame Type: Type 1 & Type 2.

Tested by : K.C.Yeung
Date issued : 22-May-2020

Approved Signatory:

CHAN Leung Chor, Dennis
Laboratory Manager

550sq.100H Double Seal-(C250)

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Report No. : 200511MA-1P

TEST REPORT OF PERMANENT SET & LOADING TEST OF GULLY TOPS, MANHOLE TOPS

BS EN 124-1 : 2015

Customer : Cheung Hing Foundry (HK) Limited
Address : 299 Pak Sha Tsuen, Kung Um Road, Yuen Long, N.T.

Date Received : 11-May-2020

Date Tested : 14-May-2020

Customer Code : C120

Site Code : -

Project : -

Sample Information Provided by Customer :

Sample Description : 550 x 550 clear opening x 100(H) Double Seal Ductile Iron Manhole Cover & Frame

Classification : C250

Clear Opening : 550 mm

Test Results:

Lab. Sample No.	200511MA-1P/1
Customer Sample No.	-
Size of Test Block mm	250
Permanent Set	
Applied Load (2/3 of Applied Test Load) kN	167.8
Measured Permanent Set mm	0.27
Loading Test	
Applied Test Load (maintained for 30 sec.) kN	252.2
Observation	NCF
Cracks Width mm	
Compliance#	Passed
Measured Mass#	Cover : 66.0 Frame : 40.0

Legend :
FAC Fracture at cover / grating
FAT Fracture at frame
NCF No Visible Fracture

Specific Requirement :

Permissible permanent set specific in BS EN 124-1 : 2015 table 5

- a) For class A15 & B125 : CO/100 or CO/20 (when CO<450mm)
- b) For class C250 to F900 (secured according to 6.6a or 6.6c) : CO/200 or 1mm max. (when CO<300mm)
- c) For class C250 to F900 (secured according to 6.6b) : CO/500 or 1mm max. (when CO<500mm)

Observation & test load specific in BS EN 124-1 : 2015 table 4

For units made of materials (a) to (c) of cl. 7, shall not show cracks in the cause of the test.

For units made of reinforced concrete, no crack wider than 0.2mm appear in the cause of the test.

Remarks :

- 1) The results apply to the sample as received.
- 2) The results relate only to the items tested.
- 3) The compliance of the test results to the specification is an opinion of the laboratory and is not covered under the HOKLAS accreditation.
- 4) The test load and size of loading block were provided by customer.
- 5) Manufacturer: Cheung Hing Foundry (HK) Limited, Country of Origin: China, Brand: CHF

Tested by : K.C.Yeung
Date issued : 15-May-2020

Approved By:

CHAN Leung Chor, Dennis
Laboratory Manager

600sq.150H Double Seal-(E600)



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Report No. : 200511MA-7P

TEST REPORT OF PERMANENT SET & LOADING TEST OF GULLY TOPS, MANHOLE TOPS

BS EN 124-1 : 2015

Customer : Cheung Hing Foundry (HK) Limited
Address : 299 Pak Sha Tsuen, Kung Um Road, Yuen Long, N.T.

Date Received : 11-May-2020

Date Tested : 14-May-2020

Customer Code : C120

Site Code : -

Project : -

Sample Information Provided by Customer :

Sample Description : 600 Square x 150(H) Ductile Iron Manhole Cover or Frame

Classification : E600

Clear Opening : 600 mm

Test Results:

Lab. Sample No.	200511MA-7P/1
Customer Sample No.	-
Size of Test Block	mm 250
Permanent Set	
Applied Load (2/3 of Applied Test Load)	kN 401.3
Measured Permanent Set	mm 0.63
Loading Test	
Applied Test Load (maintained for 30 sec.)	kN 608.1
Observation	NCF
Cracks Width	mm
Compliance#	Passed
Measured Mass#	g Cover : 83.9 Frame : 69.5

Legend :
FAC Fracture at cover / grating
FAF Fracture at frame
NCF No Visible Fracture

Specific Requirement :

Permissible permanent set specific in BS EN 124-1 : 2015 table 5

- a) For class A15 & B125 : CO/100 or CO/20 (when CO<450mm)
- b) For class C250 to F900 (secured according to 6.6a or 6.6c) : CO/300 or 1mm max. (when CO<300mm)
- c) For class C250 to F900 (secured according to 6.6b) : CO/500 or 1mm max. (when CO<500mm)

Observation & test load specific in BS EN 124-1 : 2015 table 4

For units made of materials (a) to (c) of cl. 7, shall not show cracks in the cause of the test.

For units made of reinforced concrete, no crack wider than 0.2mm appear in the cause of the test.

Remarks :

- 1) The results apply to the sample as received.
- 2) The results relate only to the items tested.
- 3) # Compliance of the test results to the specification is an opinion of the laboratory and is not covered under the HOKLAS accreditation.
- 4) The test load and size of loading block were provided by customer.
- 5) Manufacturer: Cheung Hing Foundry (HK) Limited, Country of Origin: China, Brand: CHF

Tested by : K.C. Yeung
Date issued : 15-May-2020

Approved By:

CHAN Leung Chor, Dennis
Laboratory Manager

600X800X100 Double Seal-(D400)

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Report No. : 200527MA-6P

TEST REPORT OF PERMANENT SET & LOADING TEST OF GULLY TOPS, MANHOLE TOPS

BS EN 124-1 : 2015

Customer : Cheung Hing Foundry (HK) Limited
Address : 299 Pak Sha Tsuen, Kung Um Road, Yuen Long, N.T.

Date Received : 27-May-2020

Date Tested : 3-Jun-2020

Customer Code : C120

Site Code : -

Project : -

Sample Information Provided by Customer :

Sample Description : 600 x 800 clear opening x 100(H) Double Seal Ductile Iron Manhole Cover & Frame
Classification : D400
Clear Opening : 600 x 800 mm

Test Results:

Lab. Sample No.	200527MA-6P/1
Customer Sample No.	-
Size of Test Block	mm 250
Permanent Set	
Applied Load (2/3 of Applied Test Load)	kN 267.0
Measured Permanent Set	mm 0.32
Loading Test	
Applied Test Load (maintained for 30 sec.)	kN 401.0
Observation	NCF
Cracks Width	mm
Compliance#	Passed
Measured Mass#	sg Cover : 110.8 Frame : 51.6

Legend :
FAC -- Fracture at cover / grate
FAM -- Fracture at frame
NCF -- No Visible Fracture

Specific Requirements :

Permissible permanent set specific in BS EN 124-1 : 2015 table 5

- a) For class A15 & B125 : CO/100 or CO/20 (when CO<450mm)
- b) For class C250 to F300 (secured according to 6.6a or 6.6c) : CO/300 or 1mm max. (when CO<300mm)
- c) For class C250 to F300 (secured according to 6.6b) : CO/200 or 1mm max. (when CO<500mm)

Observation & test load specific in BS EN 124-1 : 2015 table 4

For units made of materials (a) to (c) of cl. 7, shall not show cracks in the cause of the test.

For units made of reinforced concrete, no crack wider than 0.2mm appear in the cause of the test.

Remarks :

- 1) The results apply to the sample as received.
- 2) The results relate only to the items tested.
- 3) # Compliance of the test results to the specification is an opinion of the laboratory and is not covered under the HOKLAS accreditation.
- 4) The test load and size of loading block were provided by customer.
- 5) Manufacturer: Cheung Hing Foundry (HK) Limited, Country of Origin: China, Brand: CHF

Tested by : K.C. Yeung
Date issued : 4-Jun-2020

Approved By:

CHAN Leung Chor, Dennis
Laboratory Manager

675sq.88H Double Seal-(B125)



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Report No. : 200511MA-4P

TEST REPORT OF PERMANENT SET & LOADING TEST OF GULLY TOPS, MANHOLE TOPS

BS EN 124-1 : 2015

Customer : Cheung Hing Foundry (HK) Limited
Address : 299 Pak Sha Tsuen, Kung Um Road, Yuen Long, N.T.

Date Received : 11-May-2020

Date Tested : 14-May-2020

Customer Code : C120

Site Code : -

Project : -

Sample Information Provided by Customer :

Sample Description : 675 x 675 clear opening x 88(H) Double Seal Ductile Iron Manhole Cover & Frame

Classification : B125

Clear Opening : 675 mm

Test Results:

Lab. Sample No.	200511MA-4P/1
Customer Sample No.	-
Size of Test Block	mm 250
Permanent Set	
Applied Load (2/3 of Applied Test Load)	kN 84.0
Measured Permanent Set	mm 0.14
Loading Test	
Applied Test Load (maintained for 30 sec.)	kN 128.8
Observation	NCF
Cracks Width	mm
Compliance#	Passed
Measured Mass#	kg Cover : 104.0 Frame : 78.0

Legend :
FAC Fracture at cover / grating
FA Fracture at frame
NCF No Visible Fracture

Specific Requirement :

Permissible permanent set specific in BS EN 124-1 : 2015 table 5

- a) For class A15 & B12 : CO/100 or CO/20 (when CO<450mm)
- b) For class C250 to F400 (secured according to 6.6a or 6.6c) : CO/100 or 1mm max. (when CO<300mm)
- c) For class C250 to F400 (secured according to 6.6b) : CO/100 or 1mm max. (when CO<500mm)

Observation & test load specific in BS EN 124-1 : 2015 table 4

For units made of materials a) to e) of cl. 7, shall not show cracks in the cause of the test.

For units made of reinforced concrete, no crack wider than 0.2mm appear in the cause of the test.

Remarks :

- 1) The results apply to the sample as received.
- 2) The results relate only to the items tested.
- 3) Compliance of the test results to the specification is an opinion of the laboratory and is not covered under the HOKLAS accreditation.
- 4) The test load and size of loading block were provided by customer.
- 5) Manufacturer: Cheung Hing Foundry (HK) Limited, Country of Origin: China, Brand: CHF

Tested by : K.C.Yeung
Date issued : 15-May-2020

Approved By:

CHAN Leung Chor, Dennis
Laboratory Manager

675sq.102H Double Seal-(C250)



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Report No. : 200511MA-2P

TEST REPORT OF PERMANENT SET & LOADING TEST OF GULLY TOPS, MANHOLE TOPS

BS EN 124-1 : 2015

Customer : Cheung Hing Foundry (HK) Limited
Address : 299 Pak Sha Tsuen, Kung Um Road, Yuen Long, N.T.

Date Received : 11-May-2020

Date Tested : 14-May-2020

Customer Code : C120

Site Code : -

Project : -

Sample Information Provided by Customer :

Sample Description : 675 x 675 clear opening x 102(H) Double Seal Ductile Iron Manhole Cover & Frame

Classification : C250

Clear Opening : 675 mm

Test Results:

Lab. Sample No.	200511MA-2P/1
Customer Sample No.	-
Size of Test Block	mm 250
Permanent Set	
Applied Load (2/3 of Applied Test Load)	kN 168.1
Measured Permanent Set	mm 0.31
Loading Test	
Applied Test Load (maintained for 30 sec.)	kN 254.2
Observation	NCF
Cracks Width	mm
Compliance#	Passed
Measured Mass#	kg Cover : 116.7 Frame : 97.0

Legend :
FAC -- Fracture at cover / galling
FAB -- Fracture at frame
NCF -- No Visible Fracture

Specific Requirements :

Permissible permanent set specific in BS EN 124-1 : 2015 table 5

- a) For class A15 & B125 : CO/100 or CO/50 (when CO<450mm)
- b) For class C250 to F300 (secured according to 6.6a or 6.6c) : CO/300 or 1mm max. (when CO<300mm)
- c) For class C250 to F300 (secured according to 6.6b) : CO/100 or 1mm max. (when CO<500mm)

Observation & test load specific in BS EN 124-1 : 2015 table 4

For units made of material (a) to (c) of cl. 7, shall not show cracks in the cause of the test.

For units made of reinforced concrete, no crack wider than 0.2mm appear in the cause of the test.

Remarks :

- 1) The results apply to the sample as received.
- 2) The results relate only to the items tested.
- 3) # Compliance of the test results to the specification is an opinion of the laboratory and is not covered under the HOKLAS accreditation.
- 4) The test load and size of loading block were provided by customer.
- 5) Manufacturer: Cheung Hing Foundry (HK) Limited, Country of Origin: China, Brand: CHF

Tested by : K.C.Yeung
Date issued : 15-May-2020

Approved By:

CHAN Leung Chor, Dennis
Laboratory Manager

675sq.150H Double Seal-(E600)



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Report No. : 200511MA-3P

TEST REPORT OF PERMANENT SET & LOADING TEST OF GULLY TOPS, MANHOLE TOPS

BS EN 124-1 : 2015

Customer : Cheung Hing Foundry (HK) Limited
Address : 299 Pak Sha Tsuen, Kung Um Road, Yuen Long, N.T.

Date Received : 11-May-2020

Date Tested : 14-May-2020

Customer Code : C120

Site Code : -

Project : -

Sample Information Provided by Customer :

Sample Description : 675 x 675 clear opening x 150(H) Double Seal Ductile Iron Manhole Cover & Frame

Classification : E600

Clear Opening : 675 mm

Test Results:

Lab. Sample No.	200511MA-3P/1
Customer Sample No.	-
Size of Test Block	mm 250
Permanent Set	
Applied Load (2/3 of Applied Test Load)	kN 400.9
Measured Permanent Set	mm 0.41
Loading Test	
Applied Test Load (maintained for 30 sec.)	kN 602.1
Observation	NCF
Cracks Width	mm
Compliance#	Passed
Measured Mass#	kg Cover : 140.6 Frame : 89.7

Legend :
FAC Fracture at cover / galling
FAT Fracture at frame
NCF No Visible Fracture

Specific Requirements :

Permissible permanent set specific in BS EN 124-1 : 2015 table 5

- For class A15 & B125 : CO/100 or CO/50 (when CO<450mm)
- For class C250 to F300 (secured according to 6.6a or 6.6c) : CO/300 or 1mm max. (when CO<300mm)
- For class C250 to F300 (secured according to 6.6b) : CO/100 or 1mm max. (when CO<500mm)

Observation & test load specific in BS EN 124-1 : 2015 table 4

For units made of materials a) to c) of cl. 7, shall not show cracks in the cause of the test.

For units made of reinforced concrete, no crack wider than 0.2mm appear in the cause of the test.

Remarks :

- The results apply to the sample as received.
- The results relate only to the items tested.
- # Compliance of the test results to the specification is an opinion of the laboratory and is not covered under the HOKLAS accreditation.
- The test load and size of loading block were provided by customer.
- Manufacturer: Cheung Hing Foundry (HK) Limited, Country of Origin: China, Brand: CHF

Tested by : K.C.Yeung
Date issued : 15-May-2020

Approved By:

CHAN Leung Chor, Dennis
Laboratory Manager

675sq.150H Double Triangular-(E600)

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Report No. : 200511MA-5P

TEST REPORT OF PERMANENT SET & LOADING TEST OF GULLY TOPS, MANHOLE TOPS

BS EN 124-1 : 2015

Customer : Cheung Hing Foundry (HK) Limited
Address : 299 Pak Sha Tsuen, Kung Um Road, Yuen Long, N.T.

Date Received : 11-May-2020

Date Tested : 21-May-2020

Customer Code : C120

Site Code : -

Project : -

Sample Information Provided by Customer :

Sample Description : 675 x 675 clear opening x 150 (H) Double Triangular Ductile Iron Manhole Cover & Frame

Classification : E600

Clear Opening : 675 mm

Test Results:

Lab. Sample No.	200511MA-5P/1
Customer Sample No.	-
Size of Test Block	mm 250
Permanent Set	
Applied Load (2/3 of Applied Test Load)	kN 401.1
Measured Permanent Set	mm 0.31
Loading Test	
Applied Test Load (maintained for 30 sec.)	kN 603.0
Observation	NCF
Cracks Width	mm
Compliance#	Passed
Measured Mass#	kg Cover : 119.0 Frame : 62.0

Legend : FAC Fracture at cover / galling
FA Fracture at frame
NCF No Visible Fracture

Specific Requirement :

Permissible permanent set, specific in BS EN 124-1 : 2015 table 5

- for class A15 & B12 : CO/100 or CO/20 (when CO<450mm)
- For class C250 to F400 (secured according to 6.6a or 6.6c) : CO/100 or 1mm max. (when CO<300mm)
- For class C250 to F400 (secured according to 6.6b) : CO/100 or 1mm max. (when CO<500mm)

Observation & test load, specific in BS EN 124-1 : 2015 table 4

For units made of materials a) to c) of cl. 7, shall not show cracks in the cause of the test.

For units made of reinforced concrete, no crack wider than 0.2mm appear in the cause of the test.

Remarks :

- The results apply to the sample as received.
- The results relate only to the items tested.
- # Compliance of the test results to the specification is an opinion of the laboratory and is not covered under the HOKLAS accreditation.
- The test load and size of loading block were provided by customer.
- Manufacturer: Cheung Hing Foundry (HK) Limited, Country of Origin: China, Brand: CHF

Tested by : K.C.Yeung
Date issued : 22-May-2020

Approved By:

CHAN Leung Chor, Dennis
Laboratory Manager

750X900X150H Double Seal-(D400)



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TEST REPORT

PERMANENT SET & LOADING TEST OF MANHOLE COVERS, GULLY GRATINGS

BS EN 124-1 : 2015

Customer Code : C120
Date of Received : 25-February-2022
Date of Test : 25-February-2022

Report No. : 220225MA-1P
Date of Report : 25-February-2022
Pages : 1 of 1

*Customer & Sample Information

Customer : Cheung Hing Foundry (HK) Limited
Address : 299 Pak Sha Tsuen, Kung Um Road, Yuen Long, N.T.
Project : -
Sample Description : 750 x 900 clear opening x 150(H) Double Seal Ductile Iron Manhole Cover & Frame
Supplier : Cheung Hing Foundry (HK) Limited
Classification : D400
Clear Opening : 750mm
Clear Area : 750 x 900mm

Laboratory Information

Test Location : Ping Che Main Lab.

Ambient Temperature : 22.3 °C

Test Results

Lab. Sample I.D.	220225MA-1P/1
*Customer Sample I.D.	-
Size of Test Block (mm)	250
Permanent Set	
Applied Load (2/3 of Applied Test Load) (mm)	267.02
Measured Permanent Set (mm)	0.21
Loading Test	
Applied Load (Maintained for 20 sec.) (kN)	401.25
Cracks Width (mm)	-
^Observation	NCF
Compliance	Passed
^ Legend	
FAC	- Fracture at Cover / Grating
FAF	- Fracture at Frame
NCF	- No Visible Fracture

Remarks :

- * Information provided by customer.
- The results relate only to the items tested.
- Test results apply to the sample as received.
- Manufacturer: Cheung Hing Foundry (HK) Limited, Country of Origin : China, Brand : CHF.
- Mass of Cover : 142.6 Kg ; Mass of Frame : 115.3 Kg.

Approved By

- ☐ LEE Mei Yee, Julia (Managing Director)
☐ CHAN Leung Chor, Dennis (Senior Manager)
☒ WU Cheuk Kit (Operation Manager)

- End of Report-

MAN-P-001aR

Issue No.1 on 18 March 2021