

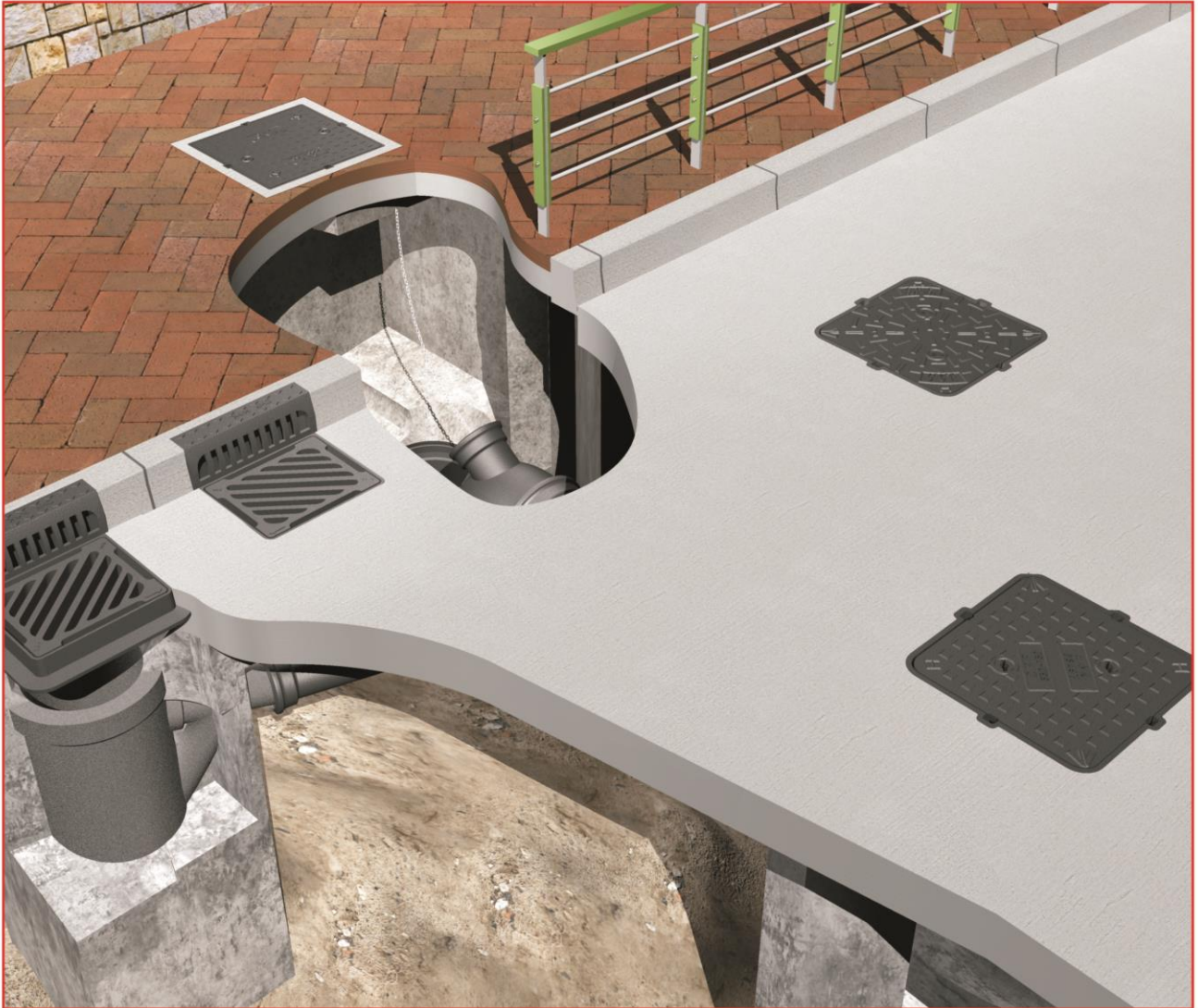


# Eco-Cast Iron

Double-Triangular & Desilting Manhole Cover and Frame,  
Road Gully Gratings/Kerb Overflow Weirs / Double Seal Manhole Cover and Frame

## 生鐵雙三角沙井蓋板 馬路邊梳冷 / 欖仔及雙止口沙井蓋板

“General Specification for Civil Engineering Works”



Cast Iron Double-Triangular & Desilting Manhole Cover and Frame  
生鐵雙三角沙井蓋板

Cast Iron Kerb Overflow Weir  
生鐵馬路邊欖仔

Cast Iron Road Gully Gratings  
生鐵馬路邊梳冷



祥興鑄鐵有限公司  
CHEUNG HING FOUNDRY (HK) LIMITED



## 生鐵雙三角沙井蓋板

- Standard : **“General Specification for Civil Engineering Works”**  
published by the Civil Engineering and Development Department,  
The Government of the HKSAR.
- Functions : Designated to be used in Government roadway drainage projects.
- Applications : For Storm Water (with circumscribed raised stubs on the cover)  
For Foul Water (with rectangular raised stubs on the cover)
- Material : Cast Iron Symbol EN GJL-150 of BS EN 1561 : 2011

### Details of manhole covers and frames

Type of manhole cover and Frame	Grade	Test requirements	
		Diameter of test block (mm)	Test load (t)
Double triangular manhole cover and frame	Medium duty	100	5
Double triangular manhole cover for sewers Frame	Heavy duty	300	30
	Heavy duty	300	30
Double Triangular desilting manhole cover for sewers Frame	Heavy duty	300	30
	Heavy duty	300	30

### STORM WATER 清水



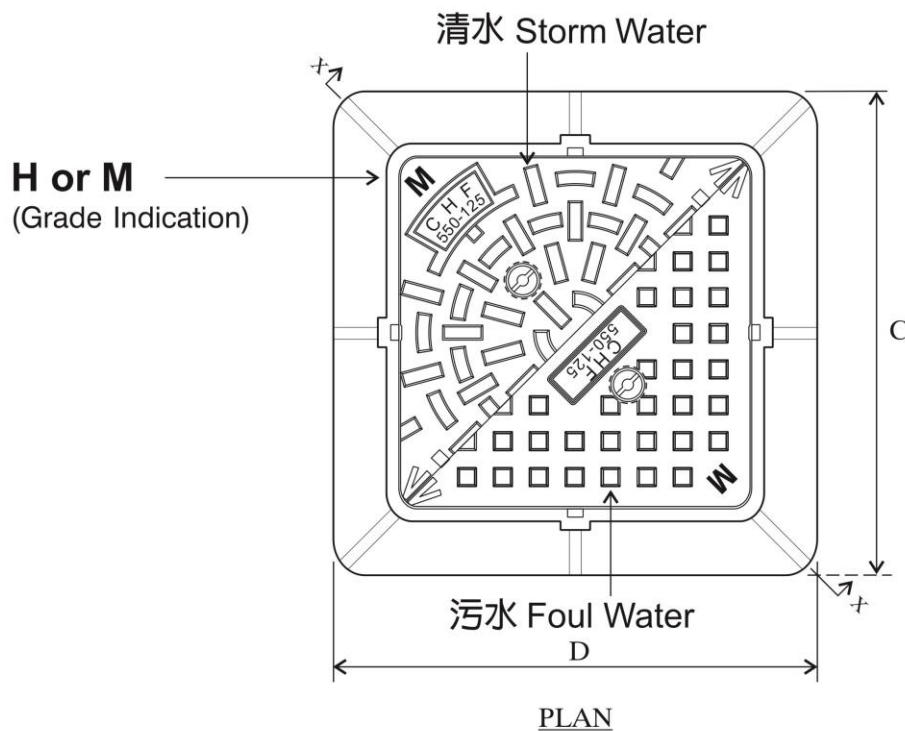
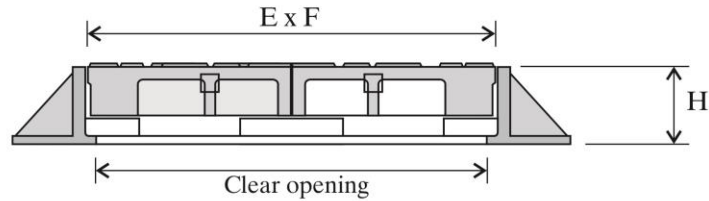
### FOUL WATER 污水





## 生鐵雙三角沙井蓋板

### General Specification for Civil Engineering Works



#### Technical Specification:

Code Number 編號	Clear Opening 內孔 mm	Over Base Size 底框外皮 C x D mm x mm	Cover Size 蓋面尺寸 E x F mm x mm	Height 高度 H mm	Type 款式 清水 Storm Water/ 污水 Foul Water	Grade 級別 H=Heavy Duty 重磅 M=Medium Duty 中磅
MAF550-125A	550	750 x 750	570 x 570	125	SW	M
MAF550-125B	550	750 x 750	570 x 570	125	FW	M
MAF550-150A	550	800 x 800	570 x 570	150	SW	H
MAF550-150B	550	800 x 800	570 x 570	150	FW	H



# Eco-Cast Iron Double-Triangular & Desilting Manhole Cover and Frame



## 生鐵雙三角沙井蓋板

### General Specification for Civil Engineering Works



### HOKLAS Endorsed Test Certificates

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E-mail: castco@netnavigator.com Website: www.castco.com.hk

Test Certificate  
Mass Determination and Loading Test to Cast Iron Drainage Goods  
(Tested to G.S. for C.E. Works : 1992 : Cl. 5.94(2) and Appendix 5.3)

Date of issue : 20-10-2006  
Page 1 of 1 page  
Castco Lab. Ref. No. : DP260925-0627 MISCEL

*Details as supplied by the client*

Client : Cheung Hing Foundry Ltd. Client's Ref. No. : --  
Contract No. : -- Title : --

Sample Description : 550 Clear Opening x 125 Height Cast Iron Double Triangle Manhole Cover & Frame  
Grade : medium duty

*Laboratory Test Result*

Date received : 25-09-2006 Date tested : 30-09-2006  
Dia. of bearing block : 100 mm

Specimen No.	Specimen Description	Grade claimed by client	Measured mass (kg)	Loading Test (Test load maintained for 30 sec)		Observation
				Test load (kN)	Loading test result (passed/failed)	
DP260925-0627	550 Clear Opening x 125 Height Cast Iron Double Triangle Manhole Cover & Frame	Medium duty	--	49.1 (5 tonnes)	Passed	N/V

Legend :  
FC - Fracture at cover. FF - Fracture at frame. N/V - No visible fracture.

Remarks:  
1. Test result relates only to the specimen tested.  
2. Compliance criterion as specified in Clause 5.95 : Manhole covers and gully gratings shall withstand the test load without fracture or cracking.

Checked by: K. N. SIT  
From No. STL/MAH/06\_08\_73\_01/07/2006

Certified by: KEITH CHOI  
C.Eng., M.Eng., MICE  
Laboratory Engineer

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Date of issue : 13-06-2006  
Page 1 of 1 page  
Castco Lab. Ref. No. : DP260607-0294 MISCEL

*Details as supplied by the client*

Manufacturer : Cheung Hing Foundry Limited  
Client : Cheung Hing Foundry Limited Client's Ref. No. : --  
Contract No. : -- Job Title : --

Sample Description : 550 mm x 550 mm Clear Opening x 150 Height Cast Iron Double Triangle Manhole Cover and Frame  
Grade : heavy duty Brand name : CHF

*Laboratory Test Result*

Date received : 07-06-2006 Date tested : 07-06-2006  
Dia. of bearing block : 300 mm

Specimen No.	Specimen Description	Grade claimed by client	Measured mass (kg)	Loading Test (Test load maintained for 30 sec)		Observation
				Test load (kN)	Loading test result (passed/failed)	
DP260607-0294	550 mm x 550 mm Clear Opening x 150 Height Cast Iron Double Triangle Manhole Cover and Frame	Heavy Duty	--	294.3	Passed	N/V

Legend :  
FC - Fracture at cover. FF - Fracture at frame. N/V - No visible fracture.

Remarks:  
1. Test result relates only to the specimen tested.  
2. Compliance criterion as specified in Clause 5.95 : Manhole covers and gully gratings shall withstand the test load without fracture or cracking.

Checked by: W. K. LEUNG  
From No. STL/MAH/06\_08\_73\_06/07/2006

Certified by: K. C. SIN  
B.Sc., C.Eng., MICE, M.Eng.  
Technical Manager

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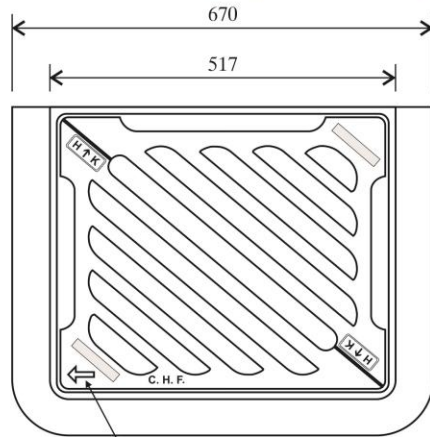


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## 生鐵雙三角馬路邊及馬路中梳冷

### 馬路邊梳冷 (Adjacent to kerb)

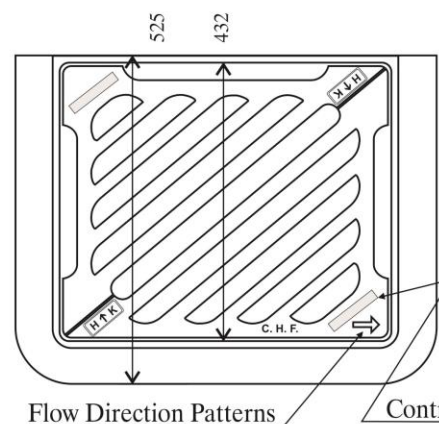


左向 Left Hand

Flow Direction Patterns

← Longitudinal Flow of Carriageway

右向 Right Hand

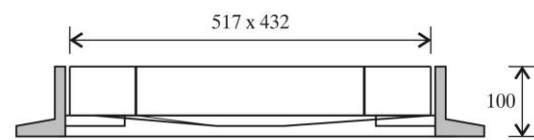
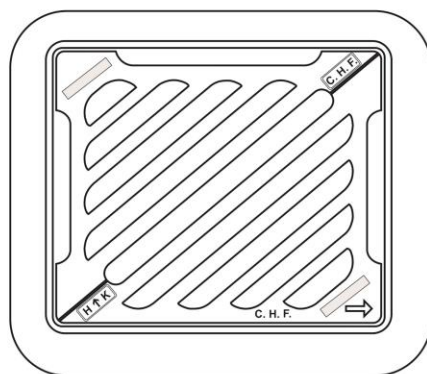


Flow Direction Patterns

Contract number

Longitudinal Flow of Carriageway →

### 馬路中梳冷 (Away from kerb)



SECTION





# Eco-Cast Iron Double-Triangular & Desilting Manhole Cover and Frame Road Gully Gratings/Kerb Overflow Weirs



## 生鐵雙三角沙井蓋板 生鐵馬路邊梳冷/櫈仔

### General Specification for Civil Engineering Works



### HOKLAS Endorsed Test Certificates

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E-mail: castco@hoklas.com Website: www.castco.org.hk

Test Certificate  
Mass Determination and Loading Test to Cast Iron Drainage Goods  
(Tested to G.S. for C.E. Works : 1992 : Cl. 5.94(2) and Appendix 5.3)

Date of issue : 20-10-2006  
Page 1 of 1 page  
Castco Lab. Ref. No. : DP260925-0627 MISCEL

Details as supplied by the client

Client : Cheung Hing Foundry Ltd. Client's Ref. No. : --  
Contract No. : -- Title : --  
Sample Description : 550 Clear Opening x 125 Height Cast Iron Double Triangle Manhole Cover & Frame  
Grade : medium duty

Laboratory Test Result

Date received : 25-09-2006 Date tested : 30-09-2006  
Dia. of bearing block : 100 mm

Specimen No.	Specimen Description	Grade claimed by client	Measured mass (kg)	Loading Test (Test load maintained for 30 sec)		
				Test load (kN)	Loading test result (passed/failed)	Observation
DP260925-0627	550 Clear Opening x 125 Height Cast Iron Double Triangle Manhole Cover & Frame	Medium duty	--	49.1 (5 tonnes)	Passed	N/V

Legend : FC - Fracture at cover. FF - Fracture at frame. N/V No visible fracture.  
Remarks : 1. Test result relates only to the specimen tested.  
2. Compliance criterion as specified in Clause 5.95 : Manhole covers and gully gratings shall withstand the test load without fracture or cracking.

Checked by : K. N. SIT  
Certified by : K. C. SIN

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Test Certificate  
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(Tested to G.S. for C.E. Works : 1992 : Cl. 5.94(2) and Appendix 5.3)

Date of issue : 13-06-2006  
Page 1 of 1 page  
Castco Lab. Ref. No. : DP260607-0294 MISCEL

Details as supplied by the client

Manufacturer : Cheung Hing Foundry Limited  
Client : Cheung Hing Foundry Limited Client's Ref. No. : --  
Contract No. : -- Job Title : --  
Sample Description : 550 mm x 550 mm Clear Opening x 150 Height Cast Iron Double Triangle Manhole Cover and Frame  
Grade : heavy duty Brand name : CHF

Laboratory Test Result

Date received : 07-06-2006 Date tested : 07-06-2006  
Dia. of bearing block : 300 mm

Specimen No.	Specimen Description	Grade claimed by client	Measured mass (kg)	Loading Test (Test load maintained for 30 sec)		
				Test load (kN)	Loading test result (passed/failed)	Observation
DP260607-0294	550 mm x 550 mm Clear Opening x 150 Height Cast Iron Double Triangle Manhole Cover and Frame	Heavy Duty	--	284.3	Passed	N/V

Legend : FC - Fracture at cover. FF - Fracture at frame. N/V No visible fracture.  
Remarks : 1. Test result relates only to the specimen tested.  
2. Compliance criterion as specified in Clause 5.95 : Manhole covers and gully gratings shall withstand the test load without fracture or cracking.

Checked by : K. C. SIN  
Certified by : W. K. LEUNG

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Tel: 2677 2032, 2677 2138 Fax: 2677 0351 E-mail: castco@hoklas.com Website: www.castco.com.hk

Test Certificate  
Mass Determination and Loading Test to Cast Iron Drainage Goods  
(Tested to G.S. for C.E. Works : 1992 : Cl. 5.94(2) and Appendix 5.3)

Date of issue : 25-01-2005  
Page 1 of 1 page  
Castco Lab. Ref. No. : DP250119-0019

Details as supplied by the client

Sample Submitted by : Asia Development (1990) Ltd.  
Client : Cheung Hing Foundry Limited Client's Ref. No. : --  
Contract No. : -- Title : --  
Sample Description : 435mm x 520mm Clear Opening x 100mm (H) Double Triangular Gully Grating and Frame, Type GA1-450  
Grade : heavy duty Brand CHF Manufacturer : Cheung Hing Foundry Ltd.

Laboratory Test Result

Date received : 19-01-2005 Date tested : 22-01-2005  
Dia. of bearing block : 300 mm

Specimen No.	Specimen Description	Grade claimed by client	Measured mass (kg)	Loading Test (Test load maintained for 30 sec)		
				Test load (Ton)	Loading test result (passed/failed)	Observation
DP250119-0019-01	435mm x 520mm Clear Opening x 100mm (H) Double Triangular Gully Grating and Frame, Type GA1-450.	heavy duty	--	20	Passed	N/V

Legend : FC - Fracture at cover. FF - Fracture at frame. N/V No visible fracture.  
Remarks : 1. Test result relates only to the specimen tested.  
2. Compliance criterion as specified in Clause 5.95 : Manhole covers and gully gratings shall withstand the test load without fracture or cracking.

Checked by : W. K. LEUNG  
Certified by : W. K. LEE  
B.Sc., C.Eng., M.C.E., M.I.Mech.E.  
Registered Professional Engineer

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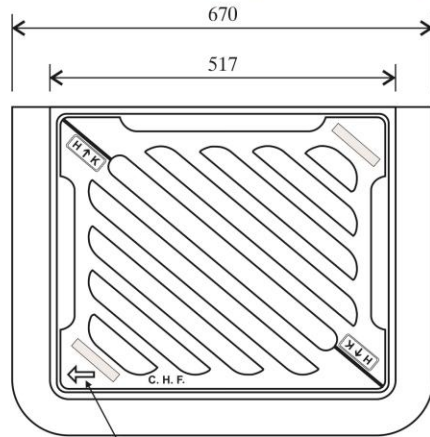


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CHEUNG HING FOUNDRY (HK) LIMITED



## 生鐵雙三角馬路邊及馬路中梳冷

### 馬路邊梳冷 (Adjacent to kerb)

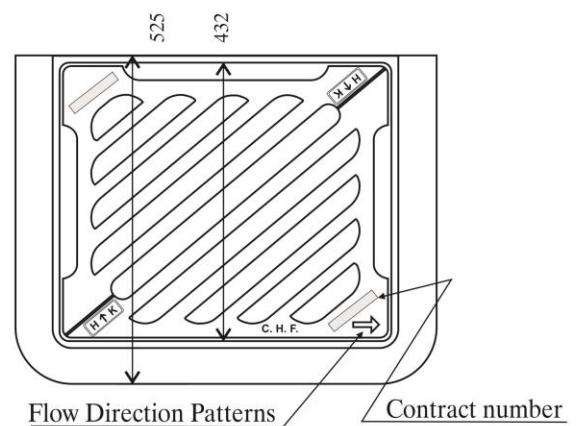


左向 Left Hand

Flow Direction Patterns

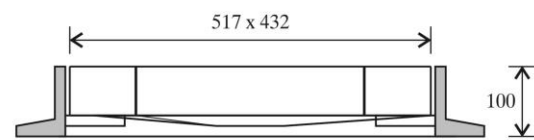
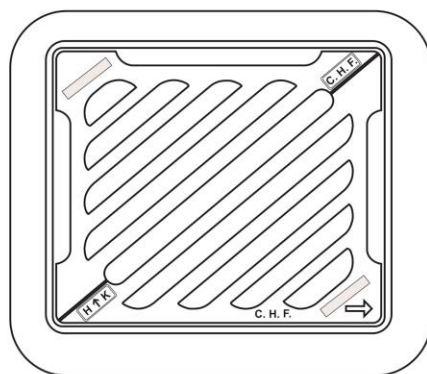
← Longitudinal Flow of Carriageway

右向 Right Hand



Longitudinal Flow of Carriageway →

### 馬路中梳冷 (Away from kerb)



SECTION



# Eco-Cast Iron Double-Triangular & Desilting Manhole Cover and Frame Road Gully Gratings/Kerb Overflow Weirs



## 生鐵雙三角沙井蓋板 生鐵馬路邊梳冷/櫈仔

### General Specification for Civil Engineering Works



### HOKLAS Endorsed Test Certificates

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E-mail: castco@netvigator.com Website: www.castco.org.hk

Test Certificate  
Mass Determination and Loading Test to Cast Iron Drainage Goods  
(Tested to G.S. for C.E. Works : 1992 : Cl. 5.94(2) and Appendix 5.3)

Date of issue : 20-10-2006  
Page 1 of 1 page  
Castco Lab. Ref. No. : DP260925-0627 MISCEL

Details as supplied by the client

Client : Cheung Hing Foundry Ltd. Client's Ref. No. : --

Contract No. : -- Title : --

Sample Description : 550 Clear Opening x 125 Height Cast Iron Double Triangle Manhole Cover & Frame

Grade : medium duty

Laboratory Test Result

Date received : 25-09-2006 Date tested : 30-09-2006

Dia. of bearing block : 100 mm

Specimen No.	Specimen Description	Grade claimed by client	Measured mass (kg)	Loading Test (Test load maintained for 30 sec)		
				Test load (kN)	Loading test result (passed/failed)	Observation
DP260925-0627	550 Clear Opening x 125 Height Cast Iron Double Triangle Manhole Cover & Frame	Medium duty	49.1 (5 tonnes)	Passed	N/V	

Legend : FC - Fracture at cover. FF - Fracture at frame. N/V No visible fracture.

Remarks : 1. Test result relates only to the specimen tested.  
2. Compliance criterion as specified in Clause 5.95 : Manhole covers and gully gratings shall withstand the test load without fracture or cracking.

Checked by : K. N. SIT  
Certified by :

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Test Certificate  
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(Tested to G.S. for C.E. Works : 1992 : Cl. 5.94(2) and Appendix 5.3)

Date of issue : 13-06-2006  
Page 1 of 1 page  
Castco Lab. Ref. No. : DP260607-0294 MISCEL

Details as supplied by the client

Manufacturer : Cheung Hing Foundry Limited

Client : Cheung Hing Foundry Limited Client's Ref. No. : --

Contract No. : -- Job Title : --

Sample Description : 550 mm x 550 mm Clear Opening x 150 Height Cast Iron Double Triangle Manhole Cover and Frame

Grade : heavy duty Brand name : CHF

Laboratory Test Result

Date received : 07-06-2006 Date tested : 07-06-2006

Dia. of bearing block : 300 mm

Specimen No.	Specimen Description	Grade claimed by client	Measured mass (kg)	Loading Test (Test load maintained for 30 sec)		
				Test load (kN)	Loading test result (passed/failed)	Observation
DP260607-0294	550 mm x 550 mm Clear Opening x 150 Height Cast Iron Double Triangle Manhole Cover and Frame	Heavy Duty	284.3	Passed	N/V	

Legend : FC - Fracture at cover. FF - Fracture at frame. N/V No visible fracture.

Remarks : 1. Test result relates only to the specimen tested.  
2. Compliance criterion as specified in Clause 5.95 : Manhole covers and gully gratings shall withstand the test load without fracture or cracking.

Checked by : K. C. SIN  
Certified by :

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Test Certificate  
Mass Determination and Loading Test to Cast Iron Drainage Goods  
(Tested to G.S. for C.E. Works : 1992 : Cl. 5.94(2) and Appendix 5.3)

Date of issue : 25-01-2005  
Page 1 of 1 page  
Castco Lab. Ref. No. : DP250119-0019

Details as supplied by the client

Sample Submitted by : Asia Development (1990) Ltd.

Client : Cheung Hing Foundry Limited Client's Ref. No. : --

Contract No. : -- Title : --

Sample Description : 435mm x 520mm Clear Opening x 100mm (H) Double Triangular Gully Grating and Frame, Type GA1-450

Grade : heavy duty Brand CHF Manufacturer : Cheung Hing Foundry Ltd.

Laboratory Test Result

Date received : 19-01-2005 Date tested : 22-01-2005

Dia. of bearing block : 300 mm

Specimen No.	Specimen Description	Grade claimed by client	Measured mass (kg)	Loading Test (Test load maintained for 30 sec)		
				Test load (Ton)	Loading test result (passed/failed)	Observation
DP250119-0019-01	435mm x 520mm Clear Opening x 100mm (H) Double Triangular Gully Grating and Frame, Type GA1-450.	heavy duty	20	Passed	N/V	

Legend : FC - Fracture at cover. FF - Fracture at frame. N/V No visible fracture.

Remarks : 1. Test result relates only to the specimen tested.  
2. Compliance criterion as specified in Clause 5.95 : Manhole covers and gully gratings shall withstand the test load without fracture or cracking.

Checked by : W. K. Leung  
Certified by :

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