

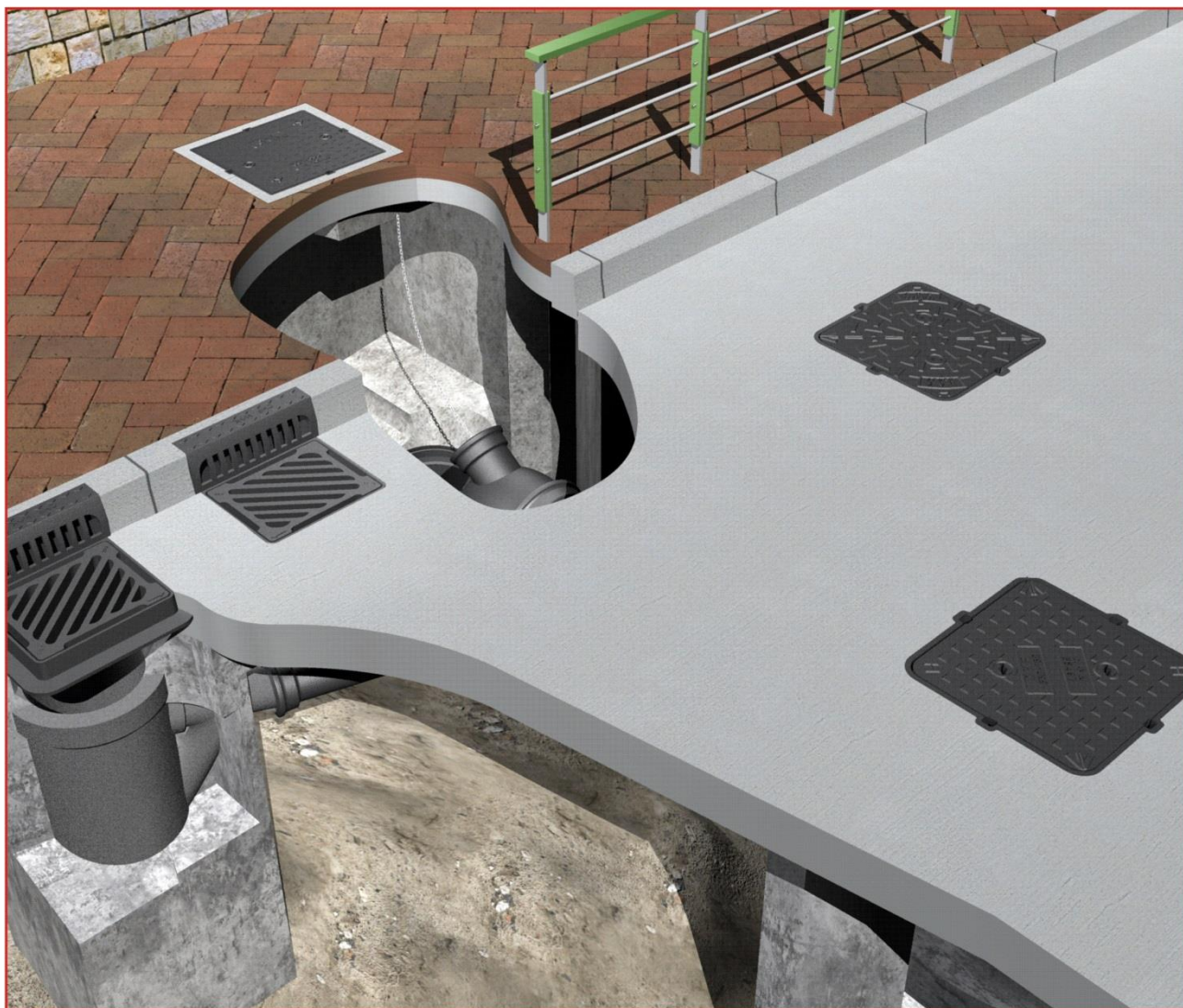


Eco-Cast Iron

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



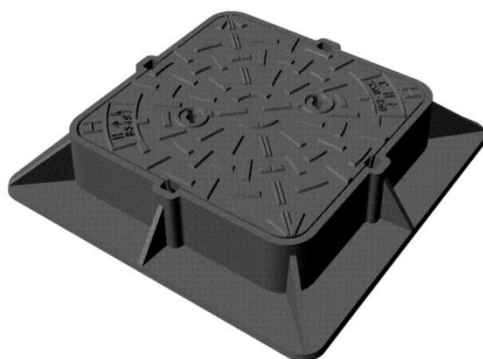
生鐵雙三角沙井蓋板

- 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

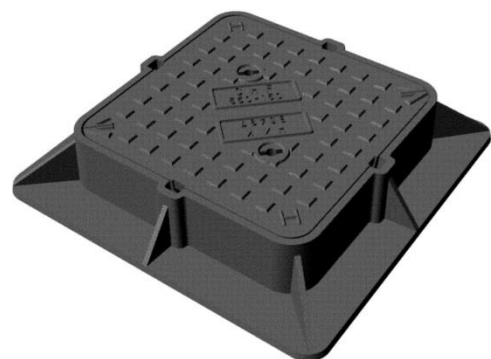
Details of manhole covers and frames

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



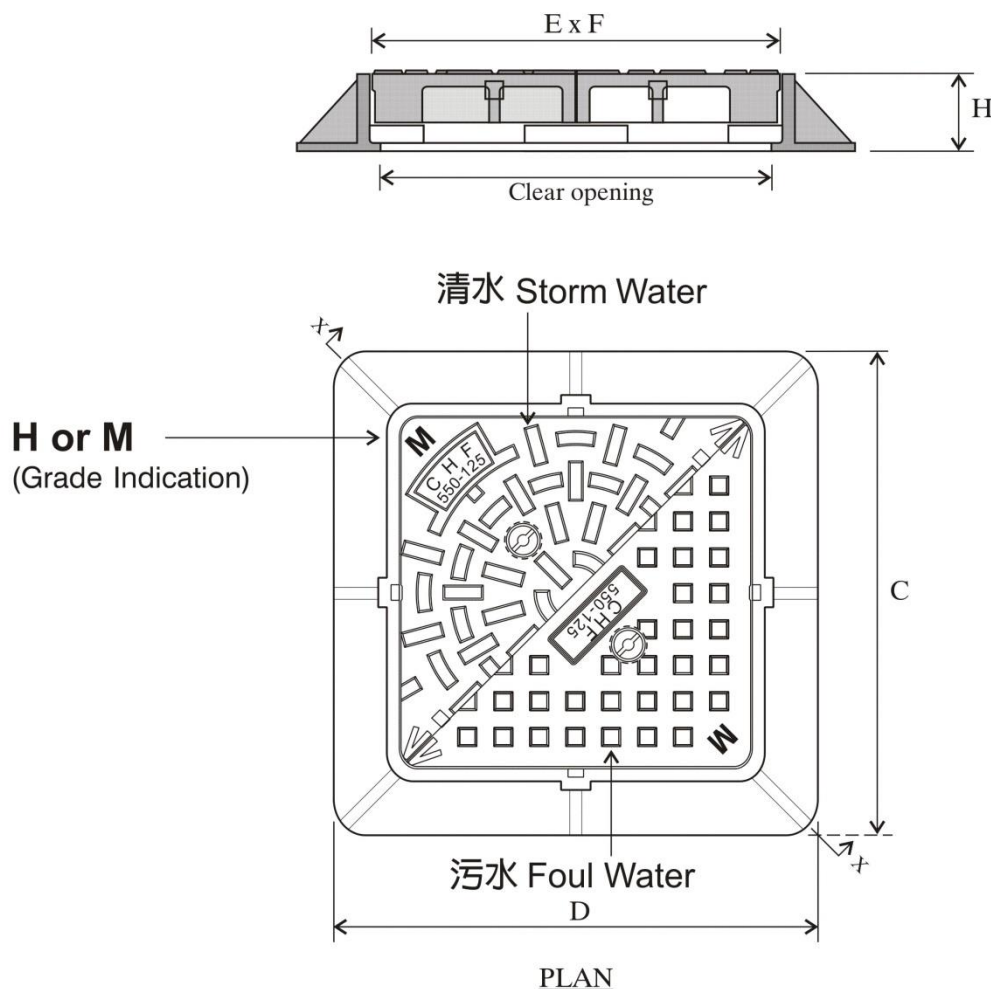
FOUL WATER 污水





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

CASTCO 佳力高試驗中心有限公司
CASTCO TESTING CENTRE LTD.

香港粉嶺安樂街33號 33, On Kai Street, Fanling, Hong Kong. Tel: 2677 2138
香港粉嶺安樂街29A號 29A, On Chuen Street, Fanling, Hong Kong. Fax: 2677 0351
E-mail: castco@netigator.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. 975, MANHOLE, CR, TJ, 44 (10/2006) Item No. DP260925

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

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香港粉嶺安樂街29A號 29A, On Chuen Street, Fanling, Hong Kong. Fax: 2677 0351
E-mail: castco@netigator.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 : 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. 975, MANHOLE, CR, TJ, 44 (10/2006)

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

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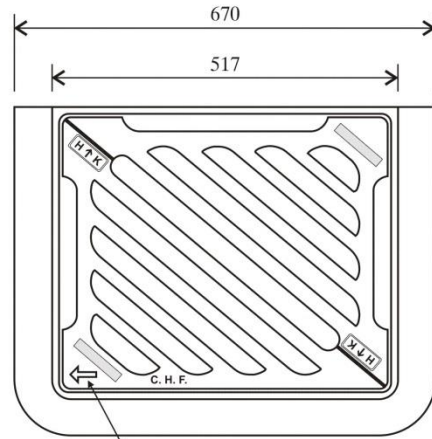


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CHEUNG HING FOUNDRY (HK) LIMITED



生鐵雙三角馬路邊及馬路中梳冷

馬路邊梳冷 (Adjacent to kerb)

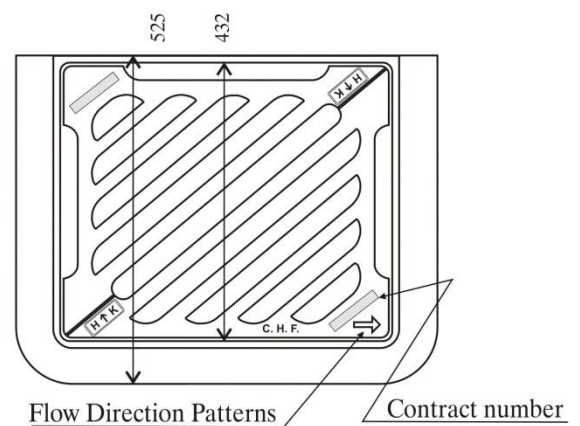


左向 Left Hand

Flow Direction Patterns

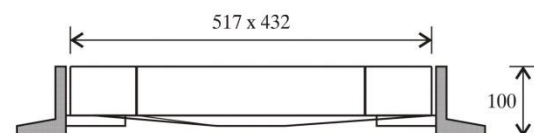
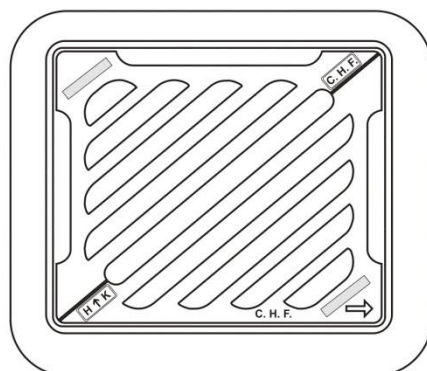
← Longitudinal Flow of Carriageway

右向 Right Hand



Longitudinal Flow of Carriageway →

馬路中梳冷 (Away from kerb)



SECTION



Eco-Cast Iron Double-Triangular Gully Gratings and Frame



生鐵雙三角馬路邊及馬路中梳冷

Standard : "General Specification for Civil Engineering Works"

published by the Civil Engineering and Development Department,
The Government of the HKSAR.

Functions : To be used with Kerb Overflow Weirs to collect roadside ground water into
underground sewage system.

Type : 1. Adjacent to Kerb - Direction of flow - Left/ Right
2. Away from Kerb

Type of gully grating and Frame	Minimum Mass (Kg)	Grade	Test requirements	
			Diameter of test block (mm)	Test load (t)
Grating for double triangular gully grating Type GA1-450	57.5	Heavy duty	300	20
Deep Frame -adjacent to kerb -away from kerb	40.5	Heavy duty	300	20
	44.0	Heavy duty	300	20



HOKLAS Endorsed Test Certificates

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佳力高試驗中心有限公司
CASTCO TESTING CENTRE LTD.
香港新界沙田安樂村安樂街29A號 29A, On Chun Street, On Lok Tsuen, Tuen Mun, N.T., Hong Kong
Tel: 2677 2002, 2677 2138 Fax: 2677 0261 E-mail: castco@netvigator.com Website: www.castco.com.hk

HOKLAS

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 20 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 corner. 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. 075, MANHOLE, 06/01/01/07/2003

Certified by: W. K. Lee
B.Sc., C. Eng., MICE, MBE
Registered Professional Engineer

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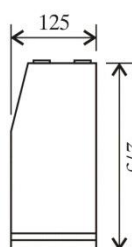
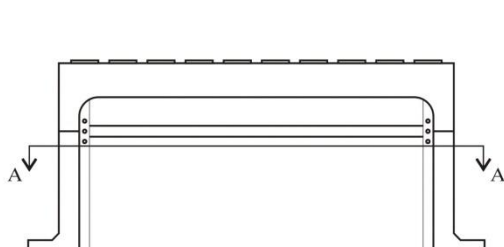
生鐵馬路邊欖仔



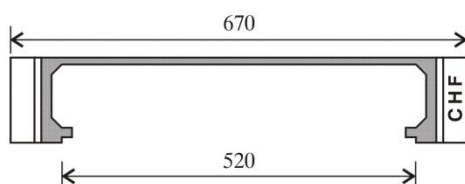
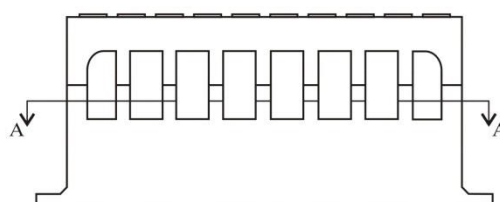
PLAN



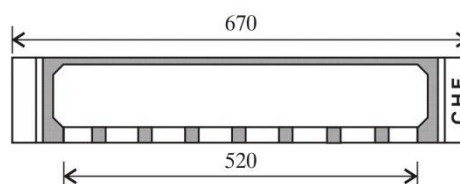
PLAN



SIDE VIEW



SECTION A - A



SECTION A - A

Material : Cast Iron Symbol EN GJL-150 of BS EN 1561 : 2011

Functions : To be used with Road Gully Gratings to collect roadside surface water into underground sewage system.



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



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

CASTCO		佳力高試驗中心有限公司 CASTCO TESTING CENTRE LTD.		HOKLAS	
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: From No. 075, MANHOLE, 05, 71, 01, 1973		Certified by: From No. 075, MANHOLE, 05, 71, 01, 1973			
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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 : 13-06-2006 Page 1 of 1 page Castco Lab. Ref. No.: DP260607-0294 MISCEL					
Details as supplied by the client					
Client: Cheung Hing Foundry Limited		Manufacturer: Cheung Hing Foundry Limited			
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	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: From No. 075, MANHOLE, 05, 71, 01, 1973		Certified by: From No. 075, MANHOLE, 05, 71, 01, 1973			
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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					
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 (Tm)	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: From No. 075, MANHOLE, 05, 71, 01, 1973		Certified by: From No. 075, MANHOLE, 05, 71, 01, 1973			
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