



金門 - 利達聯營
Gammon – Leader Joint Venture



**Wan Chai Development Phase II –
Central-Wan Chai Bypass over MTR Tsuen Wan Line
Contract No.: HK/2010/06**

Silt Curtain Deployment Plan

Rev.	Date of Issue	Remarks	Author	Approved
0	28 FEB 11	Initial issue	JY	KMB
1	08 Mar 11	Amendment for ET IEC comments	WML	KMB
2	10 Mar 11	General Amendment	WML	KMB
3	30 Mar 11	Revision in Sec.2, 6 & Appendix A	WML	KMB
4	4 Aug 11	Revision in Sec 6b	WML	KMB
5	20 Sept 12	Revision in Sec. 2, Sec 4.2 and 6c Revision in TWK/SK/M051& M072	CP/WML	KT
6	18 Oct 12	For ET, IEC Approval	CP/WML	KT
7	18 Jan 13	Revision in Sec 1, Appendix A, C	CP/WML	KT



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1. Introduction

This submission outline the method and the layout to deploy silt curtain for the Marine Works of HK/2010/06 Wan Chai Development Phase II – Central-Wan Chai Bypass over MTR Tsuen Wan Line.

With reference to the Condition 2.8 of Part C of FEP-05/356/2009, silt curtains shall be deployed around seawall dredging and seawall trench filling in reclamation shorelines zones. A Silt Curtain Deployment Plan shall be submitted to the Director of the Environmental Protection at least two weeks prior to the commencement of marine works showing the detail on the design, operation and maintenance requirements.

The installation, maintenance, repairing (in case of damage) and removal of silt curtain shall be responsible by FEP –05/356/2009 holder, Gammon Leader Joint Venture.

2. Area of Application

Silt curtain shall be provided during the dredging work and excavation for bored pile which may affect the water quality within the site. To limit pollution of water, woven geotextile shall be used as silt curtain system that is sustained by floating foam and in such a way that tidal rise and fall is accommodated.

Two types of silt curtain will be deployed:

1. Frame type silt curtain for to closely protect closed grab dredging
2. General type silt curtain to surround the dredging area, bored pile excavation area and silt screen for water intakes.

In dredging stage, one frame type silt curtain will be deployed to closely protect the closed grab dredging.

One general type silt curtain will be deployed to enclose the dredging area for protection of the transfer route between the grab frame and pontoon. The pontoon with bunker will be moored along the dredger and the silt curtains. Part of the silt curtain may be installed in site area of contract HK/2009/01, so liaison will be made with the contractor of HK/2009/01 for the implementation of silt curtains. Dredged materials in the bunker will then be transferred to the hopper



barge via the crane of a derrick lighter. Tarpaulin sheeting will be installed when necessary between the hopper barge, derrick barge and pontoon to prevent marine deposit from dropping into the sea.

In bored pile stage, the excavation will be carried out inside steel permanent casing. In addition, one general type silt curtain will be deployed to enclose the excavation area to protect the transfer of sediment from the grab to the hopper barge.

The layout plans and details for deployment for silt curtains during different stages and its general arrangement is attached in Appendix A. To suit the site condition with reference to the tidal range, the silt curtain would be extended to as close to the seabed level as practicable.

3. Use of Material

Bonar SG110/110 woven geotextile, manufactured by BONTEC, is proposed as the silt curtain system for this project. Catalogue of the material is attached in Appendix B. BONTEC is operated in accordance with an ISO 9001:2000 quality assurance system and ISO 14001 environmental management system to provide a good quality product. The Bonar geotextile is widely used in recent port works construction such as CV/2003/06 – Stanley waterfront improvement project, CV/2004/02 – Reconstruction of Wong Shek and Ko Lau Wan public pier project, CV/2002/04 – Penny’s Bay Reclamation Stage 2 and HK12/02 – CED, Central Reclamation Phase III, Engineering Works (Please refer to Appendix B). The properties of Bonar geotextile are satisfactory and fulfill the requirement as stipulated in particular specification. Visual inspection of the silt screen shall be carried in a daily basis.

According to the “Assessment and Remediation of Contaminated Sediments Program” of United States Environmental Protection Agency, silt curtain have been used at many locations with varying degrees of success. For example, silt curtain with impervious materials were found to be ineffective during a demonstration in other project primarily as a result of wind, current and tidal fluctuation. Moreover, we have demonstrated in many projects as listed above, the successful conclusion in the deployment of the material “Bonar SG110/110” woven geotextile.

According to the Environmental Monitoring and Auditing Manual, regularly water monitoring of water quality shall be carried out by Environmental Team in



order to comply with statutory regulation and maintain quality of water during the construction activities being undertaken.

4. Silt Curtain Installation Methodology

4.1 General Type Silt Curtain

- a. Link up 300mm buoys together by a net
- b. Tie the top end of the geotextile to the buoys net and the bottom end with steel chain ballast before transportation
- c. Transport the silt curtain to the location for fixing via a marine pontoon.
- d. Workers tie the buoy to nearby existing structures with nylon ropes.
- e. Put the buoys to the water and then slowly put the geotextile with the steel chain ballast into sea.
- f. In order to maintain the position of the silt curtain especially at the locations with strong current, place concrete sinkers to the seabed if required and tie the silt curtain to the sinkers with nylon strings by divers.

4.2 Frame Type Silt Curtain

- a. Prefabricate a 15m x 12m rectangular shape floating steel frame using 400mm diameter x 8mm thick steel circular hollow sections. Details as per drawing TWK/SK/M010 (A).
- b. Tie the top end of the geotextile to the steel frame by nylon strings/ steel wires.
- c. Tie the bottom end of the geotextile with ballast steel chain. This arrangement shall maintain the geotextile in vertical position during the course of the dredging.
- d. Place and unfold the silt curtain to the sea by grab dredger. Fix the floating steel frame alongside the grab dredger with a movement joint. Slowly put the geotextile together with the ballast steel chain to the sea.
- e. The frame shall enclose the dredged area to ensure water quality impact is minimized.
- f. Prepare different length of the geotextile for replacement in order to suit the various existing seabed level.

5. Silt Curtain Removal

After completion of the marine works, the silt curtain shall be removed as elaborated as follows:



- a. Prior to decommission of silt curtain, make sure all marine works or works affecting the seawall shall be completed, and also the water quality shall be checked to ensure no dispersion of muddy water outside the works area.
- b. Loosen the fixing wire of the silt curtain from the concrete block and remove the silt curtain by motor boat for general type silt curtain or crane for frame type silt curtain.
- c. Lifting the concrete block slightly by diver team and crane boat in order to minimize the disturbance of seabed causing mud wave.

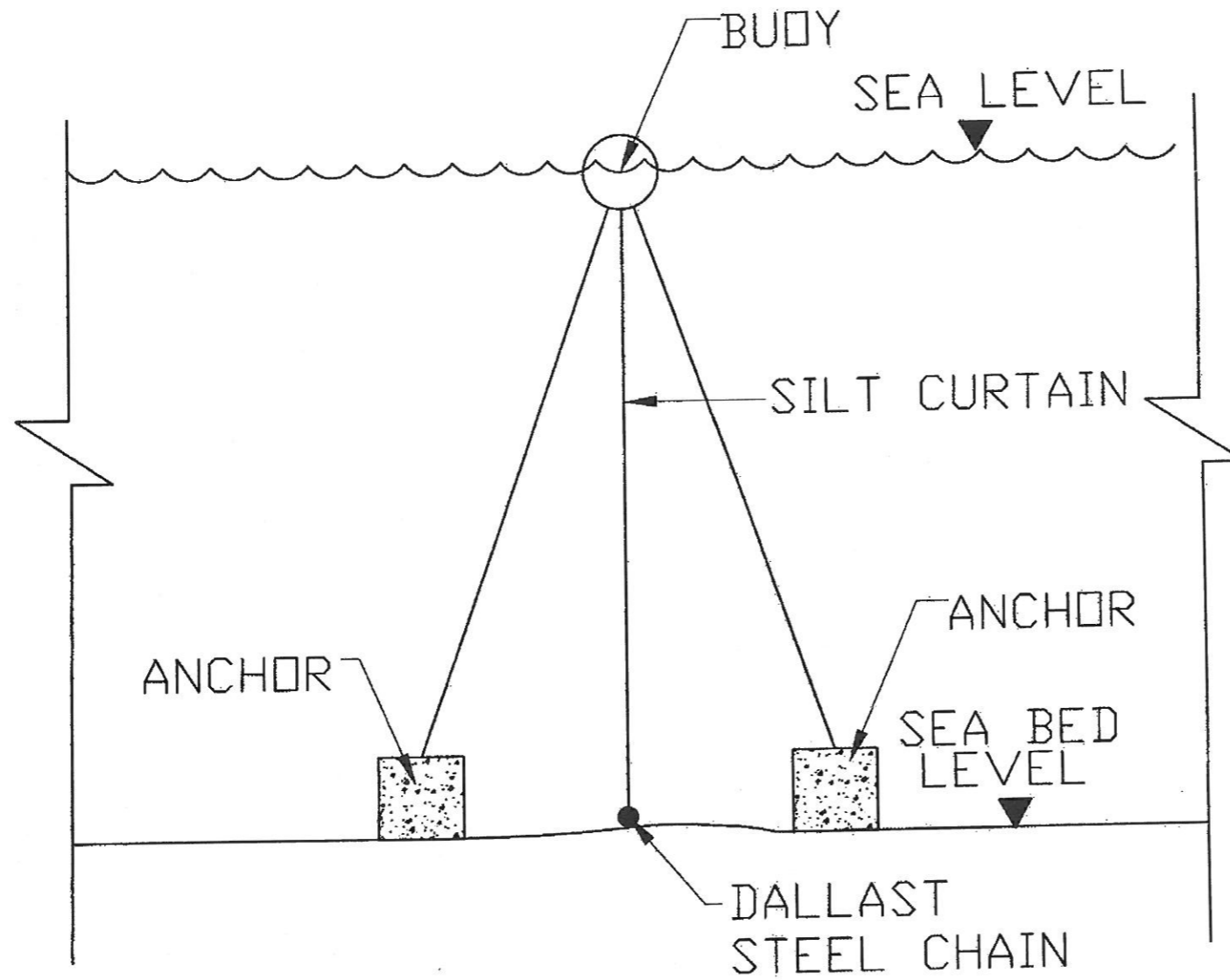


6. Inspection and Rectification Works

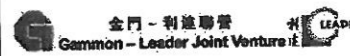
- a. Diver inspection shall be carried out to inspect the installation and decommissioning of silt curtain to ensure proper installation and functioning of the silt curtain according to the design drawing.
- b. During the entire construction period, visual inspection and regular diver inspection shall be carried out to ensure no muddy water passing through the silt curtain system and maintain proper functioning of the silt curtain. Visual inspection for the silt curtain shall be carried out daily. When damaging is suspected in daily inspection, diver inspection would be undertaken in order to ensure the performance of the silt curtain is effective and efficient. If the silt curtain is damaged and repairing works are identified, the dredging work within 50m from the location of damage will be temporarily suspended. The silt curtain will then be lift up by grab dredger/ derrick barge. A new piece of geotextile with sufficient overlapping length (1m) will be attached to the existing silt curtain. If the extent of the damaged is large and silt curtain cannot be lifted up without causing further damage, a new layer of silt curtain will be installed from sea level to seabed and covered the damaged location on two sides for minimum 5m. The dredging works will resume after repairing of the damaged silt curtains.
- c. The Environmental Officer or Environmental Supervisor shall supervise the entire installation and decommissioning processes. He shall also closely monitor the effectiveness of the silt curtain and report any irregularities which may affect its proper functioning so as to trigger early rectification by the Contractor.
- d. In case of any malfunction of the silt curtain, diver inspection shall be carried out to check whether there is any damage or defect of the silt curtain and the situation will be immediately reported to the Environmental Team. Once the damage or defect is found, the rectification works shall be carried out to maintain well-function of silt curtain under the supervision of Environmental Officer or Environmental Supervisor.
- e. 20 linear meter additional geotextile will be ready for use and keep on site for emergency replacement in case damage or defect is observed of the silt curtain.

Appendix A

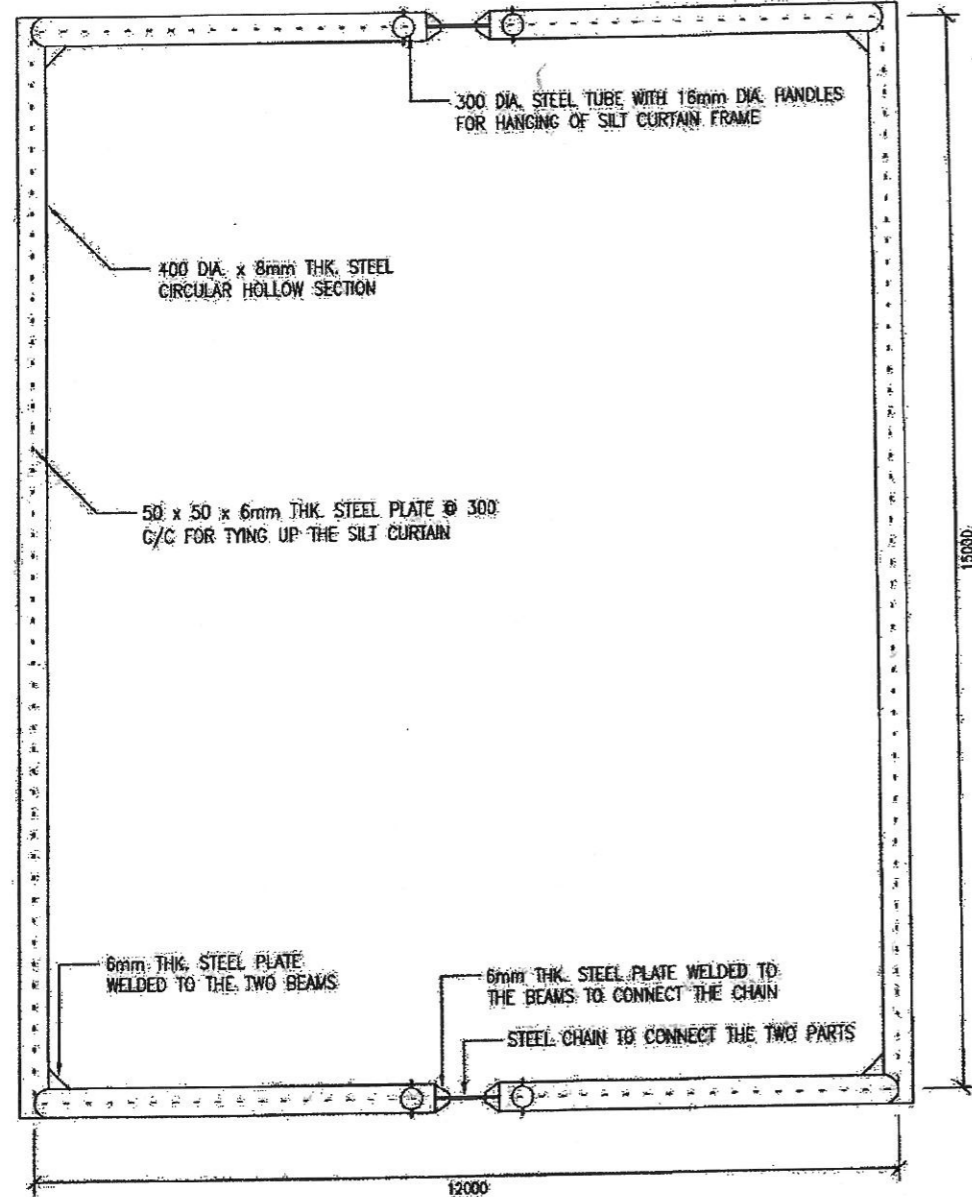
Details of Silt Curtain System



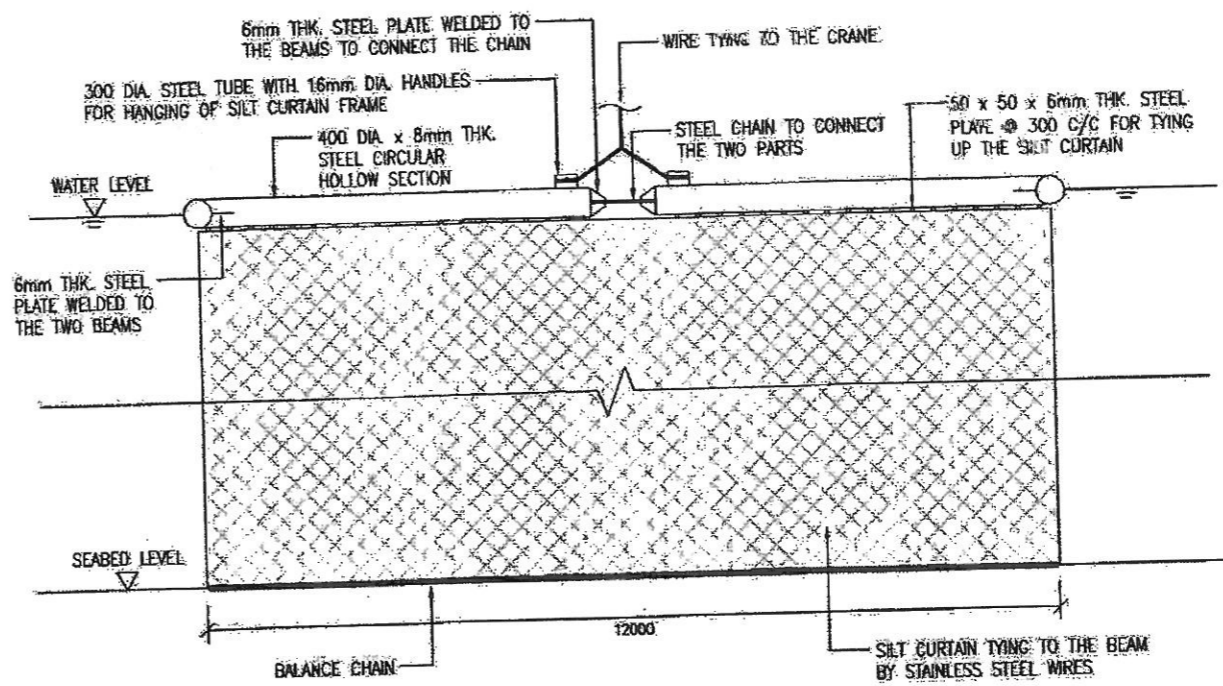
TYPICAL DETAILS FOR SILT CURTAIN DEPLOYMENT

Rev	Description	Date	Dgn	CHK	APP
WAN CHAI DEVELOPMENT PHASE II					
WAN CHAI DEVELOPMENT PHASE II - CENTRAL-WAN CHAI BYPASS OVER MTR TSUEN WAN LINE					
Contractor					
 金門 - 利達聯營 利達 (Leader)					
Drawing Title					
DETAILS OF SILT CURTAIN (GENERAL TYPE)					
Drawn	Scale				
Designed	Status				
Checked					
Approved	Drawing No.				Rev
CAD Ref					

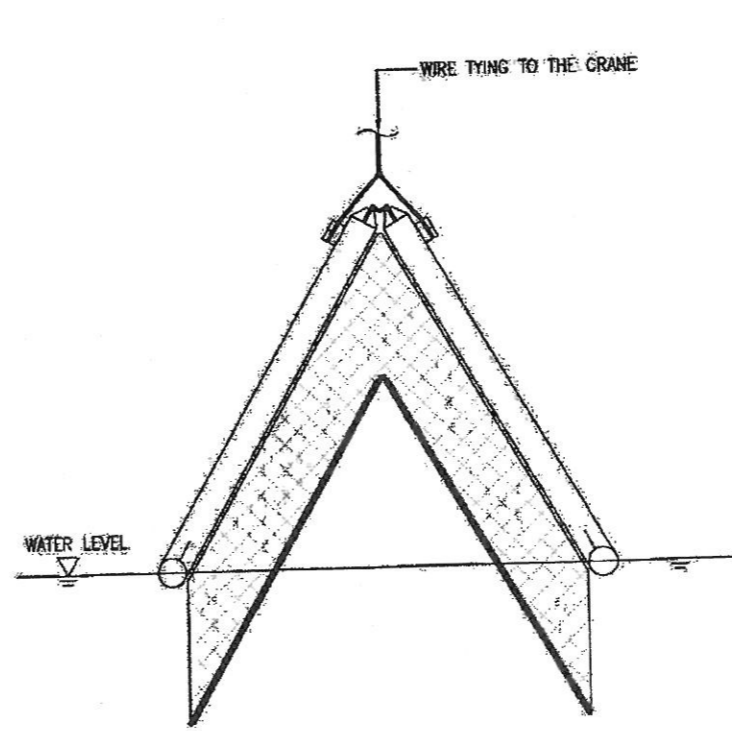
Drawing No. TWK/SK/M010



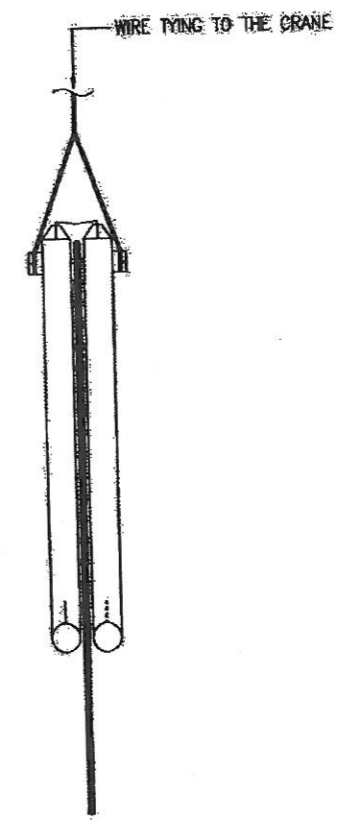
PLAN



VIEW '1' (WORKING CONDITION)



VIEW '1' (HANGING UP BY CRANE)








VIEW '1' (FINISH)

NOTE :
1. ALL CONNECTION ARE 8mm FILLET WELD, UNLESS OTHERWISE SPECIFIED.

Rev	Description	Date	By	Chk	App
WAN CHAI DEVELOPMENT PHASE II					
WAN CHAI DEVELOPMENT PHASE II - CENTRAL-WAN CHAI BYPASS OVER MTR TSUEN WAN LINE					
Contractor					
 Gammon - Lend Lease Joint Venture					
Drawing Title					
DETAILS OF SILT CURTAIN					
Drawn	S.L.	Scale	1:100 @ A3		
Designed	A.L.	Status	FOR SUBMISSION		
Checked	H.Y.	Drawn By	TWK/SK/M010		
CAD Ref					

0 100mm



- LEGEND:**
-  AREA FOR DEPLOYMENT OF SILT CURTAIN
 -  SILT CURTAIN
 -  SILT SCREEN
 -  TEMPORARY STAGING PLATFORM
 - A14  Proposed Bored Pile (2.5m dia)

NOTES:

- * REMAIN UPON REMOVAL BY HK/2009/01 CONTRACTOR. REINSTALL IMMEDIATELY BY HK/2010/06 CONTRACTOR.



Rev	Description	Date	Dgn	Chk	App
WAN CHAI DEVELOPMENT PHASE II					
WAN CHAI DEVELOPMENT PHASE II - CENTRAL-WAN CHAI BYPASS OVER MTR TSUEN WAN LINE					
Contractor					
					
Drawing Title					
LOCATION PLAN FOR DEPLOYMENT OF SILT CURTAIN AND SILT SCREEN FOR MARINE BORED PILING WORKS					
Drawn	S.L.	Scale	1:1500 @ A3		
Designed	J.Y.	Status	FOR SUBMISSION		
Checked	H.Y.	Approved	H.Y.		
CAD Ref	Drawing No.		TWK/SK/M052		Rev
					A

Drawing No. TWK/SK/M072_C



VICTORIA HARBOUR

2 NOS. OF 1000 DN SUBMARINE PIPELINE

EXISTING TSUEN WAN LINE TUNNEL

50m PIPELINE RESERVE 50m PIPELINE RESERVE

SUBMARINE PIPELINE RESERVE

EXISTING SUBMARINE SEWAGE OUTFALL PIPELINES TO BE DECOMMISSIONED (BY OTHERS)

30m 30m
MTR RAILWAY PROTECTION BOUNDARY

SEAWALL COPELINE

CENTRAL RECLAMATION PHASE 3

EXISTING SEAWALL COPELINE

PROPOSED SILT CURTAIN (GENERAL TYPE)

PROPOSED SILT CURTAIN (FRAME TYPE)

INSTALLED SILT SCREEN BY HK/2009/01 CONTRACTOR UNDER FEP-02/356/2009*

WAN CHAI (WEST) SEWAGE SCREENING PLANT

FLEET ARCADE

LEGEND:



RANGE OF DEPLOYMENT OF FRAME TYPE SILT CURTAIN (DREDGING AREA)



SILT SCREEN

*


REMAIN UPON REMOVAL BY HK/2009/01 CONTRACTOR. REINSTALL IMMEDIATELY BY HK/2010/06 CONTRACTOR.

C	GENERAL REVISED	20SEP2012	S.L.	A.L.	K.T.
B	GENERAL REVISED	29MAR2011	S.L.	J.Y.	H.Y.
A	GENERAL REVISED	21MAR2011	S.L.	J.Y.	H.Y.
-	-	16MAR2011	S.L.	J.Y.	H.Y.
Rev	Description	Date	Dgn	Chk	App

WAN CHAI DEVELOPMENT PHASE II

WAN CHAI DEVELOPMENT PHASE II - CENTRAL-WAN CHAI BYPASS OVER MTR TSUEN WAN LINE

Contractor



金門 - 利達聯營
Gammon - Leader Joint Venture

Drawing Title
LOCATION PLAN FOR DEPLOYMENT OF SILT CURTAIN AND SILT SCREEN FOR DREDGING WORKS (STAGE 2)

Drawn	S.L.	Scale	1:1500 @ A3
Designed		Status	FOR SUBMISSION
Checked	A.L.		
Approved	K.T.	Drawing No.	TWK/SK/M072
CAD Ref		Rev	C



VICTORIA HARBOUR

2 NOS. OF 1000 DN
SUBMARINE PIPELINE

EXISTING TSUEN
WAN LINE TUNNEL

50m PIPELINE RESERVE 50m PIPELINE RESERVE

SUBMARINE
PIPELINE
RESERVE

EXISTING SUBMARINE SEWAGE
OUTFALL PIPELINES
TO BE DECOMMISSIONED
(BY OTHERS)

SEAWALL COPELINE

CENTRAL
RECLAMATION
PHASE 3

EXISTING
SEAWALL
COPELINE

FLEET
ARCADE

WAN CHAI
(WEST)
SEWAGE
SCREENING
PLANT

PROPOSED
SILT CURTAIN
(FRAME TYPE)

INSTALLED SILT SCREEN
BY HK/2009/01
CONTRACTOR UNDER
FEP-02/356/2009*

30m 30m
MTR RAILWAY
PROTECTION BOUNDARY

LEGEND:



RANGE OF DEPLOYMENT OF
FRAME TYPE SILT CURTAIN
(DREDGING AREA)



SILT SCREEN

*

REMAIN UPON REMOVAL BY
HK/2009/01 CONTRACTOR.
REINSTALL IMMEDIATELY BY
HK/2010/06 CONTRACTOR.

D	GENERAL REVISED	20SEP2012	S.L.	A.L.	K.T.
C	GENERAL REVISED	29MAR2011	S.L.	J.Y.	H.Y.
B	GENERAL REVISED	21MAR2011	S.L.	J.Y.	H.Y.
A	GENERAL REVISED	15MAR2011	S.L.	J.Y.	H.Y.
-	-	3MAR2011	S.L.	J.Y.	H.Y.
Rev	Description	Date	Dgn	Chk	App

WAN CHAI DEVELOPMENT PHASE II

WAN CHAI DEVELOPMENT PHASE II -
CENTRAL-WAN CHAI BYPASS OVER MTR TSUEN WAN LINE

Contractor



Drawing Title

LOCATION PLAN FOR DEPLOYMENT OF SILT
CURTAIN AND SILT SCREEN FOR DREDGING
WORKS (STAGE 1)

Drawn	S.L.	Scale	1:1500 @ A3
Designed		Status	FOR SUBMISSION
Checked	A.L.		
Approved	K.T.	Drawing No.	TWK/SK/M051
CAD Ref		Rev	D

Appendix B

Material Catalogue of Silt Curtain

bontec

a bonar technical fabrics product



SG 110/110

Woven polypropylene geotextile made of slit film tapes

Technical data sheet according to internal specifications Bonar TF: version 06 dd. 05/01/10

Accompanying documents CE marking: version 04 dd. 05/01/10



1137-CPD-616

10

separation	filtration	reinforcement	protection	drainage

	test method	value	tolerance
Mechanical properties			
Tensile strength MD		110,0 kN/m	-9,9 kN/m
Tensile strength CD	EN ISO 10319	110,0 kN/m	-9,9 kN/m
Elongation MD		12,0 %	+/-2,8 %
Elongation CD	EN ISO 10319	8,0 %	+/-1,8 %
Static puncture resistance – CBR	EN ISO 12236	12,50 kN	-2,50 kN
Dynamic perforation resistance – cone drop	EN ISO 13433	10,0 mm	+2,0 mm
Hydraulic properties			
Water permeability normal to the plane		25x10 ⁻³ m/s	-8x10 ⁻³ m/s
Water flow normal to the plane (*)	EN ISO 11068	25 l/m ² .s	-8 l/m ² .s
Characteristic opening size (AOS)	EN ISO 12956	230,0 µm	+/-69,0 µm
Physical properties			
Thickness under 2 kPa (*)	EN ISO 9863-1	1,53 mm	+/-0,31 mm
Weight (*)	EN ISO 9864	464,0 g/m ²	+/-46,4 g/m ²
Composition	100 % polypropylene woven geotextile		
Durability	predicted to be durable for a minimum of 25 years in natural soil with 4 < pH < 8 and soil temperatures < 25° C		

roads	railways	foundations & retaining walls	drainage systems	erosion control systems
EN 13249:2000	EN 13250:2000	EN 13261:2000	EN 13252:2000	EN 13253:2000
reservoirs & dams	canals	Tunnels & underground structures	solid waste	liquid waste
EN 13254:2000	EN 13255:2000	EN 13256:2000	EN 13267:2000	EN 13268:2000

1. This geotextile is intended for use in both functions & applications highlighted with a bold border.
 2. It is the responsibility of all users to satisfy themselves that the above data is current.
 3. Roll dimensions are 5,25 m x 100 m. Other dimensions on demand.
 4. Bonar Technical Fabrics reserves the right to alter product specifications without prior notice.
 5. Although not guaranteed, these results do to the best of our knowledge offer a true and accurate record of the product's performance.
 6. Bonar Technical Fabrics cannot accept responsibility for the performance of these products as the conditions of use are beyond our control.
 7. Geotextile has to be covered within 2 weeks after installation
- (*) Not mandated characteristics for CE marking.



BONAR Technical Fabrics nv/sa, Industriestraat 39, 8240 Zelo, BELGIUM - ☎ +32(0)52 457411 - 📠 +32(0)52 457485
 BONAR Yarns & Fabrics Ltd, St. Salvador Street, Dundee DD3 7EU, UK - ☎ +44(0)1382 346102 - 📠 +44(0)1382 202378

invictly good



G AND E COMPANY LIMITED

Room B, 13/F Cheung Lee Industrial Bldg.
9 Cheung Lee Street
Chai Wan, Hong Kong
Tel: 2508 0058

Fax: 2570 0089

website: www.g-and-e.com

July 9, 2010

OFFICIAL ANNOUNCEMENT

I would like to inform you that geotextile Bontec SG100/100 is upgraded to SG110/110 effective immediately, and that SG100/100 has become obsolete. The performance of SG110/110 is superior to that of SG100/100.

No adjustment and adaptation are necessary to the current application, installation method, packaging and quality control assurance program with the improved properties of SG110/110.

Bonar Technical Fabrics is Europe's premier manufacturer of woven and non-woven geotextile products, with continuous commitment to quality, product development and production improvement. One of Bonar's many advantages is that they are vertically integrated. This means they have their own fiber production which helps ensure consistent product performance. Bonar also has a high production capacity with the facility located in close proximity to the Antwerp port. These translate into more efficient supply.

I have attached the manufacturer's letter here about the change for your reference. We would be happy to answer any questions that you may have.

Thank you for your kind attention.

Best regards

Gary Ng

Gary Ng
General Manager

bontec

a bonar technical fabrics product

Date: 5-Jul-10

To: G and E – Hong Kong
Gary

From: Isabelle Ruyffelaere – 0032 52 457 487
Philippe Grimmelpez – 0032 52 457 486

E mail: nannette@g-and-e.com

Pages: 1. +

Your reference: Bontec® SG 110/110

Our reference: G&E07052010.doc

Dear Gary,

We are pleased to confirm that the old name of the Bontec® SG100/100 has been replaced with the Bontec® SG 110/110.

Bonar constantly strives to increase the performance of the products over time. Thanks to improved polymers, extrusion and weaving techniques we managed to produce stronger geotextiles with the same unit weight. Hydraulic characteristics were not affected either.

Bonar uses very strict -in house- and ISO 9001:2000 quality and ISO 14001 environmental standards (in annex) and is using electricity generated from 100 % renewable sources.

We send hereby the newest datasheet as well for your information.

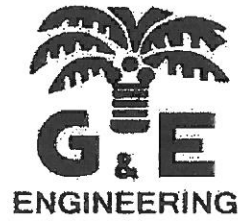
Should you require any further information, please do not hesitate to contact us.
Best regards

Philippe Grimmelpez
Global Sales & Marketing Manager



BONAR Technical Fabrics nv/sa
Industriestraat 19 • B-9240 Zede • Belgium
Tel: +32 (0)52 457 411 • Fax: +32 (0)52 457 495
E-mail: geotextiles@bonar.com

BONAR Yarns & Fabrics Ltd
St. Salvador Street • Dundee DD7 7FU • United Kingdom
Tel: +44 (0)1382 246102 • Fax: +44 (0)1382 202375
E-mail: ruguldf@bonaryarns.com



Bontec SG110/110
Woven Polypropylene Geotextile

Certification

QUALITY MANAGEMENT SYSTEM CERTIFICATE

ISO 9001 : 2000

The BQA, sa hereby declares that the quality management system of
Bonar Technical Fabrics NV - Site in Zele en Lokeren



located at Industriestraat 39 - 9240 Zele - Belgium, has been examined on 05-05-2008
and found in conformity with the ISO 9001, edition 2000, standard for the following application field:

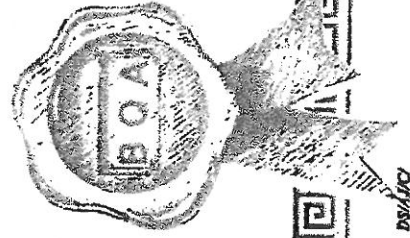
Development, manufacture and sales of a standard range of fibres and textiles such as agrotexiles, building textiles and geosynthetics, as well as similar products especially designed to customer specifications

This certificate has been issued by the BQA, sa according to its quality manual concerning the certification of quality systems, and after concluding the contract of certification N° DS/A/CER/05-05-2008/301, under which the company accepts a regular control of its quality management system.

Certificate N° BQA_QMS019_C_2004301
Valid until 04-05-2011



BQA N° 019-QMS



D. SIMOENS
Directeur

Any person aware of misuse of this certificate may inform himself to the BQA, sa. This certificate may only be disclosed in its entirety.
BQA, sa - rue Montoyer 24 (09) - 1000 Brussels.

CERTIFICATE OF ENVIRONNEMENTAL MANAGEMENT SYSTEM

ISO 14001 : 2004

The BQA, nv hereby declares that the environmental management system of the company
Bonar Technical Fabrics NV - Site in Zele en Lokeren



located at Industriestraat 39 - 9240 Zele - Belgium, has been examined on 05-05-2008
and found in conformity with the ISO 14001, edition 2004, standard for the following application field:

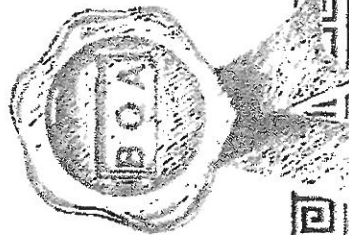
**Development, manufacture and sales of a standard range of fibres and textiles such as agrotexiles, building
textiles and geosynthetics, as well as similar products especially designed to customer specifications.**

This certificate has been issued by BQA, nv according to its quality manual EMS concerning the certification of environmental
management systems, and after the contract of certification N° DSA/JCER-EMS/05-05-2008/84
under which the company accepts a regular control of its environmental management system.

Certificate N° BQA_EMS019_C_200484
Valid until 04-05-2011



BQA N° 019-EMS



D. SIMOENS

D. SIMOENS
Directeur

Any person aware of misuse of this certificate may address himself to the BQA, nv. This certificate may only be affixed in its entirety.

BQA, nv - rue Montoyer 24 (93) - 1000 Brussels

DSA/JCER/05-05-2008

bontec

a bonar technical fabrics product

woven and non woven geotextiles

Zelz,05.10.09

CERTIFICATION OF CONFORMANCE

The undersigned supplier BONAR TECHNICAL FABRICS, hereby states under his responsibility that the following product complies with the indicated technical properties :

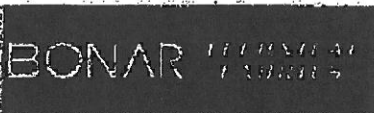
Invoice F0918342

Type	NW 9 525 : 10500 m ²
Type	NW 10 525 : 18375 m ²
Type	NW 20 5250 : 10500 m ²
Type	SG 100/100 : 5250 m ²
Delivery docs :	Packing list N. T0908524 and T0908557

Manufacturer : Bonar Technical Fabrics N.V.

BONAR TECHNICAL FABRICS N.V.

BONAR TECHNICAL FABRICS N.V.
p/a Industriestraat 39
B-9240 Zelz



invisibly good

BONAR TECHNICAL FABRICS nv/sa
Industriestraat 39 • B-9240-Zelz • Belgium
Tel +32 (0) 32 457 493 • Fax +32 (0) 32 457 495
E-mail geotextiles@bonarfb.com

BONAR Yarns & Fabrics Ltd
St. Sebadoe Street • Dundee DD3 7EU • United Kingdom
Tel +44 (0) 1382 346102 • Fax +44 (0) 1382 207288
E-mail geotextiles@bonaryarns.com

A Lee & Bonar Company

FROM : G AND E COMPANY LIMITED

PHONE NO. : + 852 2570 0089

Apr. 28 2005 12:00PM P1

12-08 2004 18:43 FAX 32 52 457495

BONAR TF GEO

001/001

bontec

a bonar technical fabrics product

Fax

Date: 11-Aug-04	
To: G and E - Hong Kong Mr. Gary NG	From: Isabelle Ruyffelaere - 0032 52 457 487 Philippe Grimmelpré - 0032 52 457 485
Fax:	Pages: 1 +
Your reference: Bonar TF acquisition of Uco Technical Fabrics	
	Our reference: G&E11082004.fax

To Whom it may concern

We hereby confirm that Bonar acquired the company UCO Technical Fabrics in October 1996 and all activities of the manufacturing and sales of Woven and Non woven geotextiles.

The Company changed name to **BONAR TECHNICAL FABRICS**.

Its headquarters are moved to Industriestraat 30, 9240 Zele, Belgium. At the same location is a new manufacturing plant of non woven geotextiles based.

The plant where woven geotextiles are produced is based on the old UCO location: weverslaan 15, Lokeren, Belgium.

Should you require any further information, please do not hesitate to contact us.

Best regards


Philippe Grimmelpré
Sales & Marketing Manager geotextiles.



BONAR Technical Fabrics nv/na
Industriestraat 30 • 9240 Zele • Belgium
Tel: +32 (0)52 457 487 • Fax: +32 (0)52 457 485
E-mail: geotextiles@bonar.com

BONAR Yarns & Fabrics Ltd.
St. Edmund Street • Dindon DD2 7QU • United Kingdom
Tel: +44 (0)1924 46116 • Fax: +44 (0)1924 28478
E-mail: yarns@bonar-yarns.com



Bontec SG110/110
Woven Polypropylene Geotextile

Installation Guideline

BONTEC: Woven and Non Woven Geotextiles manufactured by Bonar Technical Fabrics - Belgium.



RECOMMENDATION FOR THE INSTALLATION OF GEOTEXTILES

- The BONTEC geotextiles shall be kept in its original packaging in order to protect it from damaging UV-rays and high temperatures.
- The BONTEC geotextiles shall be stored protected from wind, rain, excess moisture or sunlight.
- The BONTEC geotextiles shall only be unpacked just before use. The material shall be covered within 1 week
- The BONTEC geotextiles shall be labelled and show the following data :
 - roll number
 - quality
 - name of the manufacturer
 - roll length & width
 - roll weight
- The BONTEC geotextiles shall be laid with the longitudinal axis down slopes
- A minimum overlap of 500 mm between the different sheets shall be respected. Sewing of the different fabrics shall be done with a double prayer stitching technique with non deteriorating thread.
- Wherever visibility or installation of the BONTEC geotextile is poor an extra safety overlap of +/- 1 m shall be respected
- The surfaces to be covered with BONTEC geotextiles shall be smooth and free of sticks, roots, sharp objects, and all debris that may damage the fabric. The surface to be covered shall be firm and unyielding, with no sudden changes or brakes in grade.
- The compacted sub-base shall be maintained in a smooth, uniform and compacted condition during installation of the fabric.
- In area's where wind is prevalent, fabric installation shall be started at the upwind side of the project and proceed downwind. The leading edge of the fabric shall be secured at all times with sandbags or other means sufficient to hold it down during high winds. Sandbags or rubber tires may be used as required to hold the fabric in position during installation. Tires shall not have exposed steel cords or other sharp edges which may snag or cut the fabric. Materials, equipment or other items shall not be dragged across the fabric or be allowed to slide down slopes on the fabric.
- Should the fabric be damaged during any step of the installation, the damaged section shall be repaired by covering it with a piece of fabric which extends at least 0,6 meter in all directions beyond the damaged area. The fabric shall be secured as directed by the engineer.
- Smoking shall not be permitted by personnel working on the fabric.



Bontec SG110/110
Woven Polypropylene Geotextile

List of Project Reference

Bonar

Date	Project	Contractor	Client/Department	Value
Feb-05	CV/2003/06 Stanley Waterfront Improvement Project - Construction Pier and Boardwalk	Sun Fook Kong (Civil) Ltd	Civil Engineering and Development Department	SG100/100 NW10
Feb-05	99/9028 Lamma Power Station	Wai Kee (Zens) Construction & Transportation Co Ltd	Maunsell Geotechnical Services Ltd	SG100/100
Feb-05	CV/2004/02 Reconst. of Wong Shek & Ko Lau Wan Public Piers	Kin Shing Construction Co Ltd	Civil Engineering and Development Department	SG100/100
Apr-05	CV/2002/04 Penny's Bay Reclamation Stage 2	Gammon Skanska Ltd Shun Tat Construction Engineering Ltd	Scott Wilson Ltd	SG100/100 SG100/100
Apr-05	HK/12/02 CED, Central Reclamation Phase III, Engineering Works	Best Leader Engineering Ltd Leighton - China State - Van Oord Joint Venture	Atkins China Ltd	SG100/100 SG100/100
May-05	03/8013 Lamma Island to Cyberport	Leader Marine Contractors Ltd Honwin Engineering Ltd	Maunsell Geotechnical Services Ltd	SG100/100 SG100/100
Jul-05	Shenzhen to Tai Po Twin Submarine Gas Pipeline Project	Honwin Engineering Ltd		SG100/100
Sep-05	TP37/03 Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A	Leader - Wai Kee (C&T) Joint Venture	Hyder Consulting Ltd	SG100/100
Nov-05	HY/2002/26 Stone Cutter's Bridge	Hong Kong River Engineering Co Ltd	Ove Arup & Partners HK Ltd	SG100/100
Feb-06	CV/2005/12 Fill Reception Facilities at Tseung Kwan O Area 137 Quarry Bay and Mui Wo	Penta-Ocean Construction Co Ltd	Civil Engineering and Development Department	SG100/100
Mar-06	Maintenance Dredging at Castle Peak Power Station (CPPS) Jetty	New Concepts Engineering Development Ltd	Civil Engineering and Development Department	SG100/100
Mar-06	CV/2004/04 Maintenance and Repairs to Government / Public Piers and Immersed Tubes of Hung Hom Cross-Harbor Tunnel	China Harbour Engineering Co (Group)	Civil Engineering and Development Department	SG100/100
Mar-06	HY/2005/06 Castle Peak Road Improvement West of Tsing Lung Tau	Shun Tat Construction Engineering Limited Chun Wo Construction & Engineering Co Ltd	Mouchel Halcrow JV	SG100/100 SG100/100

May-06	212 Main Works for the Proposed Third Golf Course Development at Kau Sai Chau, Sai Kung	China Harbour Engineering Co (Group)	Ove Arup & Partners HK Ltd	SG100/100
Jun-06	Hong Kong Convention and Exhibition Centre Project - Silt Screening for Intake Pipe	Wai Kee (Zens) Construction & Transportation Co Ltd Kaden - Wai Kee (C&T) Joint Venture	NA	SG100/100 SG100/100
Aug-06	EP/SP/52/06 Development of EcoPark in Tuen Mun Area 38	Kaden Construction Limited	Scott Wilson Ltd	SG100/100
Sep-06	CV/2004/06 Management and Capping of Contaminated Mud Pit IV at East of Sha Chau - Phase III	Kaden - Wai Kee (C&T) Joint Venture	Civil Engineering and Development Department	SG100/100
Oct-06	Lamma Island Cable Landing	United Marine Co Ltd	Hong Kong Electric Co Ltd	SG100/100
Nov-06	CV/2004/01 Maintenance and Repairs to Seawalls, Piers and Other Port Works	Kin Shing Construction Co Ltd	Civil Engineering and Development Department	SG100/100
Dec-06	Private project	Friendly Benefit Engineering Ltd		SG100/100
Feb-07	Prebored Socketted H-Piles at Hong Kong Convention & Exhibition Centre	Yee Hop Engineering Co Ltd	NA	SG100/100
May-07	HY/2005/06 Castle Peak Road Improvement - West of Tsing Lung Tau	Chun Wo Construction & Engineering Co Ltd	Mouchel Halcrow JV	SG100/100
May-07	CV/2004/05 Dredging Maintenance	China Harbour Engineering Co Ltd	Civil Engineering and Development Department	SG100/100
Aug-07	Dredging Project in Lai Chi Kok Shipyard	Maritime Mechanic Ltd	NA	SG100/100
Aug-07	6/WSD/06 Construction of Salt Water Supply System for Penny's Bay	Univic Engineering Ltd	Water Supplies Department	SG100/100
Nov-07	Permanent Aviation Fuel Facility Hong Kong International Airport (Contract No. H2104)	UDL Dredging Ltd	Babbie Asia Ltd	SG100/100
Dec-07	Seawall Modify, Tuen Mun Area 38	Cheer Engineering Ltd	Scott Wilson Ltd	SG100/100
May-08	DC/2007/10 Design and Construction of HK West Drainage Tunnel	Tapco Civil Engineering Co Ltd	Ove Arup & Partners HK Ltd	SG100/100
Sep-08	CV/2006/05 Maintenance of Seawalls and Navigation Channels	China Harbour Engineering Co Ltd	Civil Engineering and Development Department	SG100/100

Sep-08	Marine Works at Maldives	Kwan Sing Engineering & Construction Co Ltd		SG100/100
Nov-08	DC/2007/06 River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River	Kwan Lee Construction Co Ltd	Maunsell Consultants Asia Ltd	SG100/100
Mar-09	DC/2007/01 Drainage Improvement Works in Ki Lun Tsuen, Kwu Tung, Ma Tso Lung and Sha Ling	Shanghai Urban Construction Group Corp	Mott Cornell Ltd	SG100/100 SG40/40
Jun-09	CHEC247 Lamma Power Station - Navigation Channel Improvement	China Harbour Engineering Co Ltd		SG100/100

Updated November 26, 2009



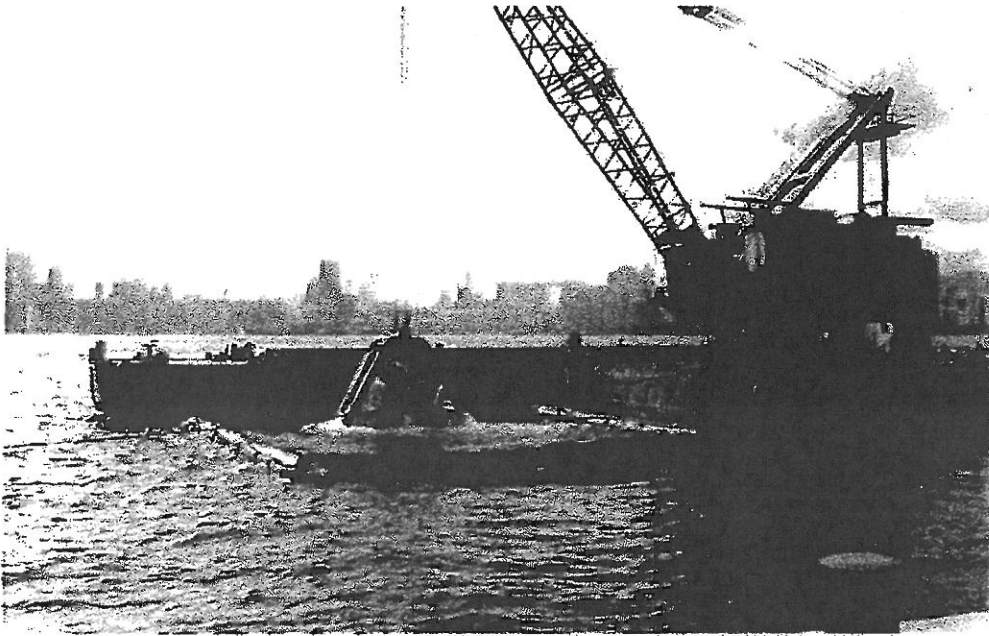
**Bontec SG110/110
Woven Polypropylene Geotextile**

Photo References



G AND E COMPANY LIMITED

Room B, 13/F Cheung Lee Industrial Building
9 Cheung Lee Street,
Chai Wan, Hong Kong
Tel: 852-2508 0058 Fax: 852-2570 0089
website: www.g-and-e.com



Date	Feb-10
Project	Contract No. HY/2009/11 Central - Wanchai Bypass - North Point Reclamation
Client	Highways Department
Consultant	AECOM
Main Contractor	China Harbour Engineering Company
Works	Silt Curtain
Materials	Woven Geotextile SG100/100
Size	3,675 sqm



Bontec SG110/110
Woven Polypropylene Geotextile

Approval Letters

24-FEB-2005 10:57 FROM SFK

TO 25700089

P.01/01

10 2 78101

CEDD 土木工程拓展署
**Civil Engineering and
 Development Department**

Web site 網址 : <http://www.cedd.gov.hk>
 E-mail 電子郵件 :
 Telephone 電話 : (852) 2762 9095
 Facsimile 傳真 : (852) 2714 2074
 Our reference 本署編號 : (15) in PW WCCV0306/2004/1/01
 Your reference 貴署編號 : CV/2003/1/3/21/MSY/CC/00007/
 CV/2003/1/3/21/MSY/CC/00018

土木工程處
 Civil Engineering Office

112

香港九龍公主道 101 號
 土木工程拓展署大樓 4 樓
 4/F, Civil Engineering and
 Development Building,
 101 Princess Margaret Road,
 Kowloon, Hong Kong

18 February 2005

Sun Fook Keng (Civil) Limited
 Rm. 3207-10,
 Great Eagle Centre,
 23 Harbour Road,
 Wan Chai,
 Hong Kong
 (Attn: Mr. Howard KONG - Fax No.2827 6275)

Dear Sirs,

Contract No. CV/2003/06

Similar Wharves Improvement Project -
Construction of Pier and Boardwalk

Fabric for Silt Curtain

I refer to your above letters dated 21.1.2005 and 15.2.2005 proposing the SG100/100 fabric supplied by "Bozar Technical Fabrics" for silt curtain.

I have no objection to your proposed material for silt curtain.

Yours faithfully,

Paul Y K Ma
 (Paul Y K MA)

Engineer's Representative
 Port Works Division
 Civil Engineering and Development Department

c.c.
 Site Office (Attn: S10W/P1A)
 CEED/P1A

File PW WCCV0306/M10/300

YK:shw

Post-Box Post No.	7871	Date	24/2/05
To	MRS. STANLEY WAN	From	CEED/CEE/P1A
On Behalf	G&E	By	SFK
Phone	25700089	Phone B	188141703
Fax	25700047	Phone C	

Mott MacDonald Hong Kong Limited

Consulting Engineers

Chief Resident Engineer's Office
North Lantau Development - Tung Chung
for Territories Development Department

Our Ref : S287/NL1/25.7/283/JY

30 June 1992

China Harbour Engineering Company
19/F, China Harbour Building
370-374 King's Road
North Point
Hong Kong.

Attn : Mr. S. Y. Yu

T.D.D. CONTRACT NO. NL 1/91		
C. E. Dept.		
DATE	ACTION	BY
28		ILK
DDA		
DR		
MS		
SR		
FOREMAN		
FILE		ILK

Dear Sirs,

North Lantau Development
Contract No. NL1/91
Tung Chung Development Phase I - Site Formation
Materials for Subsoil Drains

I refer to your letter ref. NL1/C/0097/008/MM/145 of 10/6/92 submitting materials for subsoil drains for our approval.

I have the following comments :

- 1) The proposed subsoil drain material - i.e. 300mm diameter ADS corrugated polyethylene subsoil drain pipes from Benpak Waterwise company is acceptable.
- 2) The proposed Geotextile SG17/15 from UCO (2 layers) as protection for subsoil drainage is acceptable in principal. Please submit further technical specification such as lapping and site storage requirements recommended by the manufacturer.
- 3) The proposed Greenfox Eromax Special type 5 from CCL is still under review. You will be notified of the outcome if a decision is made.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Luke Chi
Engineer's Representative

LCY/ak

Handwritten notes: 1/2, 2/17, M, 3/16

Maunsell Consultants Asia Ltd
 8/F Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road Shatin, N.T. Hong Kong
茂盛(亞洲)工程顧問有限公司
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 T +852 2605 8262 F +852 2891 2642 www.maunsell.aecm.com
 SRE's Office T +852 2669 0708 F +852 2831 2889 E sre@triw.com.hk

Your Ref. : DC0706/M1.2/1512 & 1529
 Our Ref. : (DC/2007/06)/R20/106(0023)

RECEIVED
 13 NOV 2008

Chiu Hing Construction & Transportation Co. Ltd.
 Room 201, 2/F Fuk Shing Commercial Building
 28 On Lok Mun Street
 On Lok Tsuen, Fanling
 New Territories, Hong Kong

BY:

Attn: Mr. Roger Lau (Site Agent)

13 November 2008

Dear Sir,

Contract No. DC/2007/06
River Improvement Works in Upper Lam Tsuen River,
She Shan River and Upper Tai Po River

Proposed Geotextile at Gabion Wall in She Shan River and Upper Tai Po River

I refer to your letter dated 7 November 2008 and 12 November 2008 respectively.

Please be advised that since the water flow rate of the proposed geotextile model Bontec SG100/100 meets the requirements in accordance with P.S. Clause 7.150, I have no further objections to your proposed use of woven geotextile model Bontec SG100/100, supplied by "G and E Company Ltd." at gabion wall in She Shan River and Tai Po River, subject to its satisfactory performance on site.

Yours faithfully,


 Adrian Ng
 Resident Engineer

cc MCAL - Attn: Mr. Conder Yan
 Chiu Hing H.O.

AN/CSK

Appendix C
Programme for the Deployment of the Silt Curtain

