# Lam Geotechnics Limited

Ground Investigation & Instrumentation Professionals

Ref : G1525/CS/L1099/CW-CRGLJV Date : 29 July 2019

## Chun Wo - CRGL Joint Venture

5C, Hong Kong Spinners Industrial Building, Phase 1 601- 603 Tai Nan West Street Cheung Sha Wan Kowloon

#### Attn: Mr. Paul Yu, Site Agent

Dear Sir,

#### Contract No. HK/2009/02 Wanchai Development Phase II – Central –Wan Chai Bypass at Wan Chai East <u>Silt Curtain Deployment Plan (Rev. P)</u>

Referring to the captioned submission received through email on 26 July 2019, we have reviewed your submitted details and hereby certified this submission in accordance with Condition 2.8 of FEP-03/356/2009.

Should you have any enquiry, please feel free to contact the undersigned at 2839 5666.

Yours faithfully, For and On Behalf of Lam Geotechnics Limited

Raymond Dai Environmental Team Leader

C.C.	CEDD
	AECOM WDII
	Ramboll

Mr. Jimmy Ling
 Ms. Gloria Tang
 Mr. David Yeung
 (By Fax: 2301-1277)
 (By Fax: 2587-1877)
 (By Fax: 3465-2899)









Ref.: AACWBIECEM00\_0\_11516L.19

29 July 2019

By Post and Email

Chun Wo – CRGL Joint Venture 5C, Hong Kong Spinners Industrial Building, Phase 1 601 – 603 Tai Nan West Street Cheung Shan Wan Kowloon

Attention: Mr. Paul Yu, Site Agent

Dear Sir,

## Re: FEP-03/356/2009 Contract No. HK/2009/02 Wan Chai Development Phase II - Central-Wan Chai Bypass at Wan Chai East

## Silt Curtain Deployment Plan (Revision P)

Reference is made to the captioned submission dated 26 July 2019 received through your email on 26 July 2019, please be informed that we have no adverse comment on the captioned submission in accordance with Condition 2.8 of FEP-03/356/2009.

Thank you for your attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

>~~

David Yeung Independent Environmental Checker

c.c.	CEDD	Attn: Mr. Jimmy Ling	by fax: 2301 1277
	AECOM	Attn: Ms. Gloria Tang	by fax: 2587 1877
	LAM	Attn: Mr. Raymond Dai	by fax: 2882 3331

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Contract No. HK/2009/02 Wan Chai Development Phase II Central – Wan Chai Bypass at Wan Chai East Silt Curtain Deployment Plan

# Silt Curtain Deployment Plan

P	<mark>26/07/19</mark>	Incorporate Stage 7 in WCR1 and WCR3	Ray Kwan	Peter Lam
0	17/05/18	Full Set of Submission	Ray Kwan	Hardy Lai
N	13/03/18	Full Set of Submission	Ray Kwan	Hardy Lai
М	23/11/12	Full Set of Submission	Jeff Chu	Garry Law
L	17/10/12	Full Set of Submission	Jeff Chu	Garry Law
K	02/05/12	Full Set of Submission	Jeff Chu	Garry Law
J	07/01/12	Full Set of Submission	Flora Ng	Garry Law
Ι	05/09/11	Full Set of Submission	Flora Ng	Garry Law
Н	01/02/11	Full Set of Submission	Horace Yau	Garry Law
G	19/01/11	Full Set of Submission	Horace Yau	Garry Law
F	05/01/11	Submission for Approval	Horace Yau	Garry Law
Е	29/09/10	Submission for Approval	Waffery Lau	P C Chan
D	24/09/10	Submission for Approval	Waffery Lau	P C Chan
С	08/06/10	Submission for Approval	Cecil Cheng	P C Chan
В	01/06/10	Submission for Approval	Cecil Cheng	P C Chan
А	22/03/10	Submission for Approval	Cecil Cheng	P C Chan
0	01/03/10	Submission for Approval	Cecil Cheng	P C Chan
Rev	Date	Status	Prepared By	Reviewed and Approved By Construction Manager



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Contract No. HK/2009/02 Wan Chai Development Phase II Central – Wan Chai Bypass at Wan Chai East Silt Curtain Deployment Plan

## **1.0 Introduction**

The purpose of this deployment plan is to illustrate the general layout, the construction programme, details on the design, operation and maintenance of the silt curtains to be installed for the excavation and filling works of "Wan Chai Reclamation" as recommended in the approved EIA report (Registration No.:AEIAR-125/2008). Chun Wo – CRGL Joint Venture is responsible for the installation, operation, maintenance and removal of the silt curtain.

#### 2.0 List of documentation to be referenced

2.1 Particular Specification, the relevant clauses and our remarks for the marine ground investigations is listed as follows for ease of references.

PS Clause No.	Relevant Remarks
PS Appendix 25.4	EP No. EP-356/2009 Clause 2.8 refers. The silt curtain
	deployment plan shall be certified by the ET Leader and
	verified by the IEC as conforming to the relevant
	information and recommendation contained in the approved
	EIA Report

## 3.0 General Layout of Silt Curtain (Hanging Type) by Stages

3.1 The deployment of Silt Curtain would be divided in to stages based on the locations of works and the working period, the details of the staging are as follow:-

## Stage 1 (Completed):

The silt curtain shall be deployed in 2 modes. This 1<sup>st</sup> mode is designed for general marine works from 0700 to 2200 and the 2<sup>nd</sup> mode is designed for the overnight dredging and rockfilling works from 2200 to 0600. The deployment of hanging type silt curtain in these 2 modes will be operated for 2 months from 17 September 2010 to 16 November 2010 as per CNP no. CW-RS0817-10. In the period of overnight dredging and rockfilling, the additional semi-circular geotextile will be deployed surrounding the silt screen frame installed at the intake ports of Wan Chai pumping station and Sun Hung Kai Centre. The precautionary measurement to prevent the disturbance of the existing marine sediment is that the lower part of the hanging type silt curtain would be lifted up by using the preset nylon ropes or strings. The part of the bottom of silt curtain would be lifted up by using the nylon rope with diameter of 25mm connected to the lifting hook of the derrick lighter. Once the bottom part of the silt curtain to be lifted to the top part of the silt curtain, the nodes would be made to tie the lifted up part of the curtain resulting in the silt curtain. After the completion of the action as aforesaid, the silt curtain in "bow tie shape" would be towed to the designated locations by using tug boat so that no disturbance of the ambient marine deposit happens in the course of towing. For minimization of disturbance of seabed sediment in the course of overnight dredging works, this framed silt curtain will be deployed down to the seabed during dredging operation and will be lifted in such manner that the disturbance of seabed marine deposit is minimized.

Stage 2a (Completed):



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> Dredging to be carried out to remove marine deposits from existing seabed to reach the proposed dredging level within Zone A area. (approximate 15 days)

### Stage 2b (Completed):

Dredging to be carried out to remove marine deposits from existing seabed to reach the proposed dredging level within Zone B area. (approximate 14 days)

## Stage 2c (Completed):

Rock fill placing would be carried out at the dredged area to form a level platform upto -6mPD for the installation of temporary concrete blocks seawall upto +3.6mPD. Infill of public fill material will be placed upto -1mPD within the temporary sheetpile wall. Reclamation fill are then placed from dredged level up to proposed formation level at approximate +3.5mPD inside the WCR2. (approximate 123 days)

#### Stage 2d (Completed):

Dredging to be carried out to remove marine deposits from existing seabed to reach the proposed dredging level for the installation of Precast Caisson Seawall 2X. Rock fill placing would be carried out at the dredged area to form a level platform upto -6.65mPD for the installation of concrete seawall blocks up to -2.6mPD. (approximate 37 days)

## Stage 3 (Completed):

Silt Curtain to be deployed for the reclamation works of WCR4 and TWCR4 for approximate 10 months, anticipated from April 2012 to January 2013.

#### Stage 4 (Completed):

Silt Curtain to be deployed for the reclamation works of WCR3 for approximate 11 months, anticipated from February 2014 to January 2015.

#### Stage 5:

Silt Curtain to be deployed for the construction of permanent seawall blocks near reclamation works of WCR4, the removal of temporary reclamation TWCR4, the reinstatement of seabed, removal of diaphragm wall, installation of permanent seawall block, filling work behind constructed permanent seawall. The silt curtains will be deployed for approximate 19 months, anticipated from March 2018 to September 2019.

Once the silt curtain is assembled on land, each span of silt curtain will be transported to the derrick lighter for storage and further joining. Different spans of silt curtain will be joined together by typing rope on the barge. The connected silt curtain will be temporarily tied up and racked. The silt curtain units with anchors will then be placed in the sea, divers will be deployed to cut the temporary typing ropes of silt curtain and allow the silt curtain hang in the sea.

When moving the silt curtain is required, the towing rope will be lifting the weight chain of silt curtain. The precautionary measurement to prevent the disturbance of the seabed by lifting up the lower part of type silt curtain would be lifted up using the preset nylon ropes or strings prior to moving. The part of the bottom of silt curtain would be lifted up by using the nylon rope with diameter of 25mm connected to the lifting hook of the derrick lighter. Once the bottom part of the silt curtain to be lifted



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> to the top part of the silt curtain, a node would be made tying both parts together. After the completion of the action as aforesaid, the silt curtain in "bow tie shape" would be towed to the designated locations by using tug boat so that no disturbance of the seabed happens in the course of towing. Joined span silt curtain will be pulled by a towing work boat slowly to the placement location.

## Stage 6 (Completed):

Silt Curtain will be deployed for modification of seawall Type 10 and 11 at Ex-PCWA Helipad. This modification includes construction of landing steps at Ex-PCWA Helipad. The silt curtains will last for approximate 5 months, anticipated from September 2018 to January 2019.

The method to deploy / relocate silt curtain in Stage 6 will be similar to the procedures stated in Stage 5.

## Stage 7:

Silt curtain deployed in this stage will be served the purpose of rectification of seabed profile in WCR1 and WCR3 Area. Silt curtain will be deployed in double layer (floating type) along with the completed WCR1 and WCR3 Area together with the barge. Trimming seabed will be carried out for a section of approximately 30m long per time of shifting the barge and silt curtain. Both layers of silt curtain will be attached to the shore with the inner layer enclosing the trimming area and the outer layer enclosing the works area including the derrick lighter. The silt curtains will be deployed for approximate 4 months, anticipated from June 2018 to September 2019.

- 3.2 The layout plans for deployment of silt curtains during stage 5 and 7 should refer to Appendix A. To suit the site condition and with reference to the tidal range, the silt curtain would be extended to as close to the seabed level as practicable.
- 3.3 The working procedure for installation and its technical data of silt curtain should refer to Appendix B.
- 3.4 In order to prevent muddy water from going out of the precast concrete block / caission, additional silt curtain is prepared on site. A single marine access point will be adopted for the outer layer silt curtain to minimize the chance of potential muddy dispersion during vessel movement into and out of the silt curtain enclosed area. In addition to the outer layer silt curtain, localized inner layer silt curtain / geotextile would be adopted to enclose the derrick lighter marine works area or cover exposed cut slope accordingly to maintain double layer silt curtain system throughout stage 5 to minimize potential silt dispersion
- 3.5 The maintenance procedure for silt curtain is as follow:
  - 1. Site supervisors should be responsible to inspect the condition of the silt curtain daily during the course of marine works. A visual inspection checklist will be prepared and filled in by site supervisors. All checklists should be kept on site for record purpose. A template of checklist is attached on Appendix C.
  - 2. If silt curtain is found to be damaged and repairing works are identified if necessary, all marine works at within 50m from the location of silt curtain would



be temporary suspended. The silt curtain would be lifted up from sea by chain block pulley system, the whole/part of (depends on damaged condition) silt curtain would be replaced. In case of repairing damaged floats, temporary suspension of marine works should not imply.

- 3. The suspended marine works as above-mentioned would only be resumed after satisfactorily repairing of the damaged silt curtain.
- 4. As a regular maintenance, refuse or debris around the silt curtain would be collected on daily basis to avoid adverse effect to marine plants as well as to the public.
- 5. Spare silt curtain sheets and the associated material would be stored on site to maintain for prompt replacement in case of any damages observed.
- 6. Prior to removal/opening of the silt curtain, site supervisor should closely monitor with the marine plant's operators to ensure no marine works should be carried out at within the silt curtain enclosure area.
- 7. Upon adverse weather and typhoon signals are foreseen, the following actions will be carried out before and after the weather:-
  - If typhoon signals T3 or above is anticipated to be hoisted, all marine plants and vessels will be demobilized from site area, the silt curtain will remain deployed.
  - Upon cancellation of typhoon signal or typhoon signal is below T3, diving inspection will be carried out to ensure the integrity the silt curtain. A sample of diving inspection checklist is enclosed in Appendix C in this deployment plan.



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#### 4.0 Deployment Schedule

4.1 The deployment schedule of the silt curtain could refer to the table below. It is prepared based on the Initial Works Programme and may subject to changes to reflect the actual site progress:

Anticipated Installation Works		allation Works	Silt Curtain to be	Anticipated Removal by	Total Duration, days
Thusing	From (a)	То	Maintained until	(h)	= (h) - (a)
Stage 1 (completed)	1 May, 2010	15 May, 2010	15 November, 2010	22 November, 2010	205
Stage 1a (completed)	8 February, 2011	31 March, 2011	31 March, 2011	31 March, 2011	51
Stage 2a (completed)	06 Mar 2012	21 Mar 2012	21 Mar 2012	21 Mar 2012	15
Stage 2b (completed)	22 Mar 2012	05 Apr 2012	05 Apr 2012	05 Apr 2012	14
Stage 2c (completed)	06 Apr 2012	07 Aug 2012	07 Aug 2012	07 Aug 2012	123
Stage 2d (completed)	29 Nov2012	8 Jan 2013	8 Jan 2013	8 Jan 2013	37
Stage 3 (completed)	15 August, 2012	31 Jan, 2013	31 January, 2013	31 January, 2013	169
Stage 4 (completed)	18 February, 2014	4 March, 2014	24 December, 2015	24 December, 2015	674
Stage 5	15 March, 2018	21 March, 2018	30 September 2019	30 September 2019	<mark>564</mark>
Stage 6 (Completed)	28 September, 2018	13 October, 2018	28 January, 2019	31 January 2019	126
Stage 7	24 June 2019	30 June 2019	30 September 2019	30 September 2019	<mark>98</mark>



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## 5.0 Construction Programme.

5.1 The rectification work in Stage 7 will commence in June 2019 and targeted to be completed in September 2019.

## 6.0 Technical Details

6.1 The technical details on the design, operation and maintenance of the silt curtains are enclosed in Appendix B: Bontec SG110/110

# 7.0 Appendices

- 7.1 Appendix A Layout Plan for Silt Curtain Deployment at Stage 5 and 7
- 7.2 Appendix B Technical Details of the Silt Curtain
- 7.3 Appendix C Inspection Checklists



Contract No. HK/2009/02 Wan Chai Development Phase II Central – Wan Chai Bypass at Wan Chai East Silt Curtain Deployment Plan

# 7.1 Appendix A

# Layout Plan for Silt Curtain Deployment for Stage 5 and 7





WORKS SEQUENCE AT WCR1/WCR3 AREA:

- 1. DERRICK LIGHTER WILL BE DEPLOYED IN WCR1/WCR3 AREA WITH THE SILT CURTAIN.
- 2. TRIMMING WORKS WILL BE CARRIED OUT IN SESSIONS AND SHIFT ALONG THE SHORELINE UNTIL ALL SEABED HIGH SPOTS ARE TRIMMED AND RECTIFIED.



OUTER LAYER SILT CURTAIN MODEL: SG110

	— INNEF MODEL	R LAYER S SG110	SILT CURTAIN	
	(-B)	2-3 1	A A CONSTRUCTED SEAWALL	the second se
			1001111 海軍範疇行公眾貨物廃 Wan Chai Waterfront Pro	副語 Imenade
1000	) (A3)	CAD REF.	CW-CR/ENG/ENG-4704	
JUNE	E 2019			
WAN	DESIGNED		DRG. NO.	REV.
WAN	APPROVED		CWCRJV/HK200902/SK4719	-



Contract No. HK/2009/02 Wan Chai Development Phase II Central – Wan Chai Bypass at Wan Chai East Silt Curtain Deployment Plan

# 7.2 Appendix B

# Technical Details of the Silt Curtain Model: Bontec SG110/110



# **SG WOVEN GEOTEXTILES**



# we under cover the world



# A TOTAL RANGE OF GEOTEXTILES

BONAR TECHNICAL FABRICS NV/SA ndustriestraat 39 B-9240 Zele BELGIUM T.: +32 (0) 52 457 487 F.: + 32 (0) 52 457 495 F-MAIL : geotextiles@bonartf.con

For UK and Ireland: BONAR YARNS & FABRICS Ltd Dundee Scotland DD3 7EU T.: +44 (0)1382 346102 F.: +44 (0)1382 229238 E-MAIL: geotextiles@bonarvarns.com

website: www.bonartf.com

# bontec waven and nonwoven gestextiles

Bontec SG woven geotextiles are manufactured from polypropylene tapes & yarns, and exhibit an excellent chemical resistance to commonly encountered acids and alkalis at ambient temperatures. Available in a lightweight range with products from 80 to 200g/m2, and a heavyweight range from 200 to 800g/m2.

Available ex-stock in 4.5m and 5.25m wide rolls or other widths to order



Other geotextiles available within the Bontec range include Highflow, High strength Wovens and Thermally Bonded & Needlepunched Nonwovens

Visit us at our website: www.bonartf.com

For UK and Ireland: BONAR YARNS & FABRICS Ltd t. Salvador Street | Dundee | Scotland | DD3 7EU T.: +44 (0)1382 346102 | F.: +44 (0)1382 229238 E-MAIL: geotextiles@bonaryarns.com

Headquarters: BONAR TECHNICAL FABRICS NV/SA Industriestraat 39 | B-9240 Zele | BELGIUM T.: +32 (0) 52 457 487 | F.: + 32 (0) 52 457 495 E-MAIL: geotextiles@bonartf.com









REINFORCEMENT





For further product information, be it a technical data sheet or to discuss your project with one of our in-house geotextile experts please do not hesitate to contact one of our offices listed below.

# **SG Woven Geotextiles** PRODUCT PROFILE

"An exciting range of Standard Grade geotextiles that offer the perfect solution to your Separation requirements. With tensile strengths ranging from 10 to 300 kN/m you can be certain that an SG fabric will be available with the performance that you are looking for."

DAILY SEPARATION, SOIL STRENGTHENING OR GROUND REINFORCEMENT?

#### Bontec SG facts include:

Tensile strengths up to 300 kN per metre (kN/m) width ■ CBR Puncture Strengths ranging from 1.800 N to 12.500 N SG Mechanical Properties that offer maximum strength at minimal cost and ensure the products survivability both against installation damage and in the longer term.

Lightweight woven geotextiles typically offer greater mechanical strengths per unit weight than comparable nonwoven grades. This makes lightweight woven geotextiles the ideal choice for separation

Waterflows normal to the plane that are generally several times more than that required by design

A range of consistent opening sizes suited for use in soils ranging from clay to coarse granular fill.

SG hydraulic properties that are suited to the demands of everyday separators.

#### Typical applications for SG woven geotextiles include:

As a general purpose separator for use under site access roads and areas of hardstanding.

As a separation and strengthening layer under new roadways, car parks, industrial units etc.

As an erosion control layer under heavy rock armour in coastal defence projects.

For any separation application where there exists a need to prevent the

intermixing of soft foundation soils with good clean granular fill.



SG Woven Geotextiles have been manufactured as a cost effective solution to your soil separation and stabilisation applications. They are manufactured from highly durable polypropylene polymer and have a long life expectancy when used in permanent structures.



Invisiony good



Bontec SG110/110 Woven Polypropylene Geotextile

**Product Specification** 



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



			$\begin{array}{c} \bullet \bullet$	
separation	filtration	reinforcement	protection	drainage

	test method	value	tolerance
Mechanical properties			
Tensile strength MD	ENUSO 10310	110,0 kN/m	-9,9 kN/m
Tensile strength CD	EN IOU IUSIS	110,0 kN/m	-9,9 kN/m
Elongation MD	EN ISO 10319	12,0 %	+/-2,8 %
Elongation CD		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	ENUSO 11059	25x10-3 m/s	-8x10-3 m/s
Water flow normal to the plane (*)	EN 180 1 1036	25 l/m².s	-8 l/m².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/m²	+/-46,4 g/m <sup>2</sup>
Composition	100 % polypropylene w	voven geotextile	
Durability	predicted to be durable for a minimum of 25 years in natural soil with 4 < pH < 9 and soil temperatures < 25 $^{\circ}$ C		

roads	railways	foundations & retaining walls	drainage systems	erosion control systems
EN 13249:2000	EN 13250:2000	EN 13251:2000	EN 13252:2000	EN 13253:2000
			*	<b>A</b> N
reservoirs & dams	canals	Tunnels & under- ground structures	solid waste	liquid waste
EN 13254:2000	EN 13255:2000	EN 13256:2000	EN 13257:2000	EN 13265:2000

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, 9240 Zele, BELGIUM - ☎ +32(0)52 457411 - 🖹 +32(0)52 457495 BONAR Yarns & Fabrics Ltd, St. Salvador Street, Dundee DD3 7EU, UK - ☎ +44(0)1382 346102 - 🖺 +44(0)1382 202378



**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 w

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 nonwoven 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 locates 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 SG110/110 Woven Polypropylene Geotextile

Certification



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P

# **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 agrotextiles, 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° DS/AJ/CER-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



D. SIMOENS Directeur

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

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🛲 a bonar technical fabrics product 🛲



woven and non woven geotextiles 📾

Zelc,05.10.09

# **CERTIFICATION OF COMFORMANCE**

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

Invoice F0918342

Туре	NW 9 525 : 10500 m <sup>2</sup>
Туре	NW 10 525 :18375 m <sup>2</sup>
Туре	NW 20 5250 : 10500 m <sup>2</sup>
Type	SG 100/100 : 5250 m <sup>2</sup>
Delivery does :	Packing list N. T0908524 and T0908557

Manufacturer : Bonar Technical Fabrics N.V.

BONAR TECHNICAL FABRICS N.V.

untelan

BONAR TÉCHNICAL FABRICS N.V. p/a industrissinger 39 B-8240 Zoig



BONAR TECHNICAL FABRICS nv/sa Industriestraat 39 • B-9240 Zele • Belgium Tel +32 (0) 52 457 493 • Fax +32 (0) 52 457 495 E-mail geotextiles@bonartf.com

BONAR Yams & Fabrics Ltd St. 5alvador Straat • Dundee DD3 2EU • United Kingdom Tel +44 (0) 1382 346102 • Fax 44 (0) 1382 202378 5-mail geotextiles@bonaryams.com



12/08 2004 16:43 FAX 32 52 457495

BONAR TF GEO



A banse technical fabrics product

# Fax

Date: 11-Aug-04		8-11911 N		
To: G and E - Hong Kong	From: Isabelle Ruyffelad	ere – 0032 52 457 487		
Mr. Gary NG	Philippe Grimmelprez - 0032 52 457			
Fax:	Pages: 1 +			
Your reference: Bonar TF acquisitio	on of Uco Technical Fabrics	2 3		
	Our reference:	G&E11082004.fax		

#### To Whom it may concern

We hereby confirm that Bonar acquired the company <u>UCO Technical Fabrics</u> 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 headquaters are moved to Industriestraat 39, 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

Aur

Bhilippe Grimmelprez Sales & Marketing Manager geotextiles.



BONAR Technical Fabrics nv/sa Industriesmar 33: 8-9240 Zate - Belgium Ter +32 (0)52.457 411 - Fax,+32 (0)52 457 495 E-mail geotext/los@bonard.com BONAR Yarns & Fabrics Ltd St. Salvador Street - Dundoo DO3-7EJ - United Kingdom Tel +44 (0)1382 346102 - Eac +44 (0)1382 202378 E-mail rguid@banaryeris.com



Bontec SG110/110 Woven Polypropylene Geotextile

List of Project Reference

## Bonar

Date	Project	Client	Consultant	Style
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	Maunsell Geotechnical	SG100/100
		Honwin Engineering Ltd	Services Ltd	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	Shun Tat Construction Engineering Limited	Mouchel Halcrow JV	SG100/100
	West of Tsing Lung Tau	Chun Wo Construction & Engineering Co Ltd		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	Wai Kee (Zens) Construction	NA	SG100/100
	Intake Pipe	& Transportation Co Ltd Kaden - Wai Kee (C&T) Joint Venture		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	Kin Shing Construction Co Ltd	Civil Engineering and	SG100/100
	Maintenance and Repairs to Seawalls, Piers and Other Port Works		Department	
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	Babtie 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	Tapbo 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 Connell 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





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





Date	March, 2010
Project	Contract No. HK/2009/01 Wan Chai Development Phase II -Central - Wanchai Bypass at Hong Kong Convention and Exhibition Centre
Client	Civil Engineering and Development Department
Consultant	AECOM Asia Co. Ltd
Main Contractor	Chun Wo - Leader Joint Venture
Works	Woven Geotextile SG100/100
Size	4,200 sqm
Application	Intake Silt Curtain





Date	Mar 2010
Project	Contract No. KL/2009/01 Site formation for Kai Tak Cruise Terminal Development
Client	CEDD
Consultant	Scott Wilson Ltd
Main Contractor	Penta-Ocean Construction Co. Ltd
Works	SG100/100 as Silt Curtain
Size	1,050 sq m





Date	March 2010
Project	KL/2009/01 Site formation for Kai Tak Cruise Terminal Development
Client	CEDD
Consultant	Scott Wilson Ltd
Main Contractor	Penta-Ocean Construction Co. Ltd
Materials	SG100/100
Size	1,050 sqm





Date	March 2006
Project	Contract No. HY/2005/06 Castle Peak Road Improvement West of Tsing Lung Tau
Client	Highway Department
Consultant	Mouchel Halcrow JV
Main Contractor	Chun Wo Construction & Engineering Co., Ltd.
Works	Silt Curtain
Size	1,050 sqm



Bontec SG110/110 Woven Polypropylene Geotextile

**Approval Letters** 

24-FEB-2005 18:57 FROM SFK 10:2 78101

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

 Web site
 網址
 :http://www.sedd.gov.hk

 E-mail
 電子郵件:

 Telephonc
 電話
 :(852) 2762 5035

 Facsimile
 修改
 :(852) 2714 2054

 Out reference
 水薯榕號: (15) in PW WC/CV0306/R20/540 Pt.01

 Your reference
 水薯榕號: CIV:002091/1.2/HW/SY/CC/mc(\$0087).

 CIV:002091/1.2/HW/SY/CC/mc(\$0113)

Sun Fook Kong (Civil) Limited Rms. 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

Stanley Waterfront 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 "Bonar Technical Fabrics" for silt curtain.

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

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Yours faithfully,

Paul YKMA)

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

c.c. Site Office (Attn: SIOW/PIA) CEG/PIA

File PW WC/CV0306/M10/300

YKM/den

	1 Date 24/2/05 Dellas
Post-It" Fax Note	From CHAMGESCE
TO MP. STANGET MC	Too. Sek all Thes
Co.Dept. 0120 C	Phone 607 110
FAX# 25700049	

TOTAL P.01

土木江程處 Civil Engineering Office

TO 25700089

答海九能公主道 101 號

Kowtoon, Hong Kong

古る九龍公王道 for an 上木工程拓展琴大樓 4 様 4/F. Civil Engineering and Development Building,

101 Princess Margaret Road.

18 February 2005

P.01/01

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Service and service

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	(FDD Chill F	RELIVED	土木工程處	Q
	Development Dep	and Cartment	Civil Engineering (	Office
	Web stre 網址 :http://www.ccdd E-mail 電子郵件 Telephone 電話 :(852) 2760 5737 Facsimile 僅其 :(852) 2714 2054 Our reference 本審檔號 :() in PW WC/C Your reference 來函檔號 :KS330/2005	.gov.bk V0402/R20/340 Pt.I	香港九酯公主道101號 土木工程拓展著大概四 4/F, Civil Engineerin Development Buildir 101 Princess Margar Kowloon, Hong Kong	楼 g and ig, rei Road, J
	Kin Shing Construction Compa	ny Limited	24	January 2005
	1/F, 27 Yin Chong Street, Mong Kok Kowloon (Attn.: Mr. Patrick P K Chan - S	Site Agent)	<u>BY MAIL &amp; F</u>	<u>IX No. 2780 2085</u>
	Dear Sirs,	a na 2007 NANS A 2017 NANA 2017 20		9 <u>2 5</u>
-	Reconstruction	Contract No. CV/2004/02 a of Wong Shek and Ko Lau	2 <u>Wan Public Piers</u>	
	<u>Material</u>	Submission - Geotextile for S	Silt Curtain	
а. н	l refer to your letter of 14 silt curtain.	.1.2005 enclosing the particular	s of the geotextile for	fabrication of
	In accordance with PS manufactured by Bonar Technica Pursuant to PS Clause 26.	Clause 26.08(2), the proposed l Fabrics is approved to be used 08(1), you are required to subm	I "SG 100/100" wow under the captioned C it details of the silt curr	en geotextile Contract.
0	Before their deployment.	1 <sup>0</sup>		AIIIS 2 WEEKS
	Contract No. 6 CP   F V Poss Initial, Copy Action CM / / / / / / / / / / / / / / / / / / /	You	rs faithfully,	
2	Sub-A GPL / Eng.(1) 6	Engineer	W H LEE)	
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# 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

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

Attn ; Mr. S. Y. Yu

Dear Sirs,

North Lantau Development Contract No. NL1/91 Tung Chung Development Phase I - Site Formation Materials for Subsoil Drains 30 June 1992



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 :

- 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 Greenfix Eromat 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

14

Luke Chi Engineer's Representative

LC/JY/ak

a.

Maunsell Consultants Asia Ltd 8/F Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road. Shatin, N.T., Hong Kong

<u>茂盛(亞洲)工程顧問有限公司</u> 香港新界沙田郷事會路 138 號新城市中央质場第 2 座 8 機 T +852 2605 6262 F +852 2691 2649 www.maunsell.aecom.com SRE's Office T +852 2669 0708 F +852 2631 2889 E sre@ltriw.com.hk

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

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

NIECIEIUVI NI 13 NOV 2008 BY:----

MAUNSELL AECOM

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 Tal 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.

Maunsell AECOM Group Chief Executive : TC K Shum. President : D D SLo. Chief Financial Officer : P K L Wong. Maunsell Consultants Asia Ltd. Chairman : FS Y Bong. Managing Director : E S C Ma. Executive Directors : C W T Wong, A K W L, M C Pearson, S A Robinson, F S K Yan, S H R Sham, K K H Tsang, D C SLee, L J Endicolt, E K H Chan, F H Y Ng, K L Wong, A Y Kwok, A K F Kwan, C K Lau, P A Chao, T K S Tang. F S K Yan, S H R Sham, K K H Tsang, D C SLee, L J Endicolt, E K H Chan, F H Y Ng, K L Wong, A Y Kwok, A K F Kwan, C K Lau, P A Chao, T K S Tang. F S K Yan, S H R Sham, K K H Tsang, D C SLee, L J Endicolt, E K H Chan, F H Y Ng, K L Wong, A Y Kwok, A K F Kwan, C K Lau, P A Chao, T K S Tang. Technical Directors : Y Yamasala, C H T So, J Y Ling, C C W Ng, P M Cheak, K H K Chong, J W Whiten, H Y Y Wong, J Y E Chui. Consultants : A Hamilton, R D Taylor. N C Cheung, Associates : R J Mickell, J T Hall, C W K Luk, I S P Chung, L N K tau, I W L Ho, A P S Au, K B C Cheng, P T Coak, D S W Leung, J Y E Li Offices : Assiralia, Canada, China, Denmark, Egypt, Gaza, Greece, Hong Kong, India, Indonesia, Iraland, Israet, Malaysia, Natherlands, Cman, Philippines, Poland, Puerto Rico, Romania, Cetar, Singapore, South Korea, Thaitand, United Arab Emirates, United Kingdom, United States of America, Vietnam.

caring**company** 



Contract No. HK/2009/02 Wan Chai Development Phase II Central – Wan Chai Bypass at Wan Chai East Silt Curtain Deployment Plan

# 7.4 Appendix C

# **Inspection Checklists**



Contract No.	HK/2009/02
Contract Title	Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East
	Silt Curtain Daily Checklist
位置:	
日期:	檢査員:
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	期	期	期	期	期	期
	-	<u> </u>	Ξ	四	Ŧ.	六
整潔						
1. 沒有垃圾在隔泥布內						
2. 已清理隔泥布內垃圾						
其他問題(請註明):						
隔泥布狀況						
1. 隔泥布沒有損壞						
2. 隔泥布沒有鬆脫						
其他問題(請註明):						
★ = 不滿意,須改善						
- = 不適用						

JV: \_\_\_\_\_(Sign) \_\_\_\_\_(Name)

RSS:	 (Sign)
	 (Name)



Contract No.: <u>HK/2009/02</u>

Contract Title:

 Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East

 Silt Curtain Diving Inspection Checklist

- 3. Diver:

整潔	狀況		
1. 沒有垃圾在隔泥布內			
2. 已清理隔泥布内垃圾			
其他問題(請註明):			
隔泥布狀況			
1. 隔泥布沒有損壞			
2. 隔泥布沒有鬆脫			
3. 隔泥布接口位沒有鬆脫			
其他問題(請註明):			
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說明: ✓ = 滿意			
★ = 不滿意,須改善			
- = 不適用			

JV: \_\_\_\_\_\_ (Sign) \_\_\_\_\_ (Name)

RSS: \_\_\_\_\_(Sign) \_\_\_\_\_(Name)