

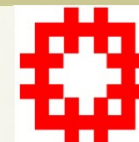


Experience Sharing on Gondola Supervision in Housing Authority Maintenance & Improvement Works

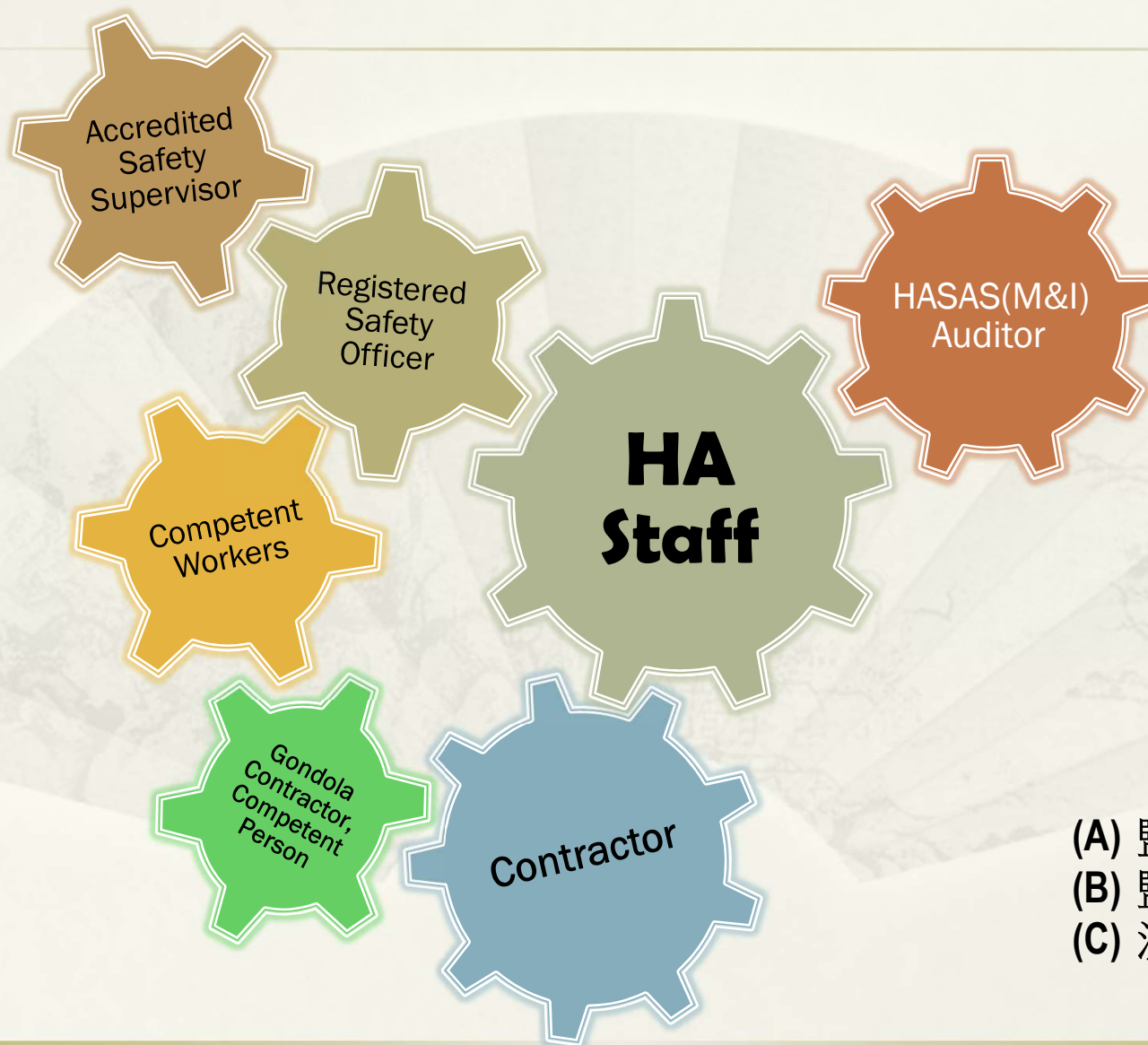
LUK Wai-hang, Amos
Maintenance Surveyor / Statutory Compliance 4
RSO, RSA, RPS(BS)(PFM), RI(S), MHKIS, RMWC(Ind), Accredited Mediator
Hong Kong Housing Authority

20 June 2022



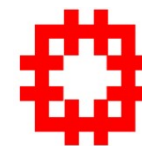


Supervision System



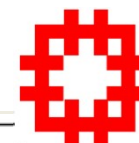
- (A) 監督要點・地面
- (B) 監督要點・天面
- (C) 測試要點

(A) 監督要點 - 地面



1. 個人防護裝備的使用前檢查
2. 獨立救生繩檢查
3. 圍封計劃及上落船位置充分準備
4. 吊船通告和文件
5. 零容忍、材料重量參考
6. 吊船 - 九大簋口訣
7. 安全使用手推車口訣
8. 防止墮物及保護 - 可調節工具繩/手繩
9. 墜重物的安排
10. 吊船結構與核准圖則現場核對
11. 吊船外角配有保護墊
12. 提供滅火設備

1.個人防護裝備的使用前檢查



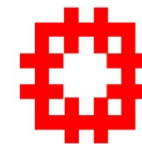
- 只允許使用有登記的**個人防護裝備**
- 保持個人防護裝備登記冊更新
- 安全帶和相關部件應由合資格人員定期檢查，時間不超過 12 個月，並根據製造商的建議。

種類	日期：		
	工人名稱：		
	職位：		
	狀況	狀況	狀況
安全帽連 Y 型帽繩	良好/需更換/ 過期	良好/需更換/ 過期	良好/需更換/ 過期
全身式安全帶	良好/需更換/ 過期	良好/需更換/ 過期	良好/需更換/ 過期
連接器 (連接安全帶扣)	良好/需更換/ 過期	良好/需更換/ 過期	良好/需更換/ 過期
安全帶吊繩(尾繩)	良好/需更換/ 過期	良好/需更換/ 過期	良好/需更換/ 過期
防止墜下器	良好/需更換/ 過期	良好/需更換/ 過期	良好/需更換/ 過期
獨立救生繩	良好/需更換/ 過期	良好/需更換/ 過期	良好/需更換/ 過期
牢固點(羊眼圈)	良好/需更換/ 過期	良好/需更換/ 過期	良好/需更換/ 過期
繫穩錨固裝置 安裝後的檢查及測 驗報告	有/沒有/ 過期	有/沒有/ 過期	有/沒有/ 過期
流動式臨時繫穩裝 置連 救生繩(卡門棒)	良好/需更換/ 過期	良好/需更換/ 過期	良好/需更換/ 過期
流動式臨時繫穩裝 置連 救生繩(夾架式)	良好/需更換/ 過期	良好/需更換/ 過期	良好/需更換/ 過期
其他：			
檢查人員簽署：			



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2.獨立救生繩檢查



- 纖維索或金屬索
- 纖維索直徑最少是15.9毫米
- 金屬索直徑最少是8毫米
- 歐盟標準EN 12385-1
- 應25千牛頓的靜態抗斷強度
- 單一連續的繩
- 一人一條獨立救生繩

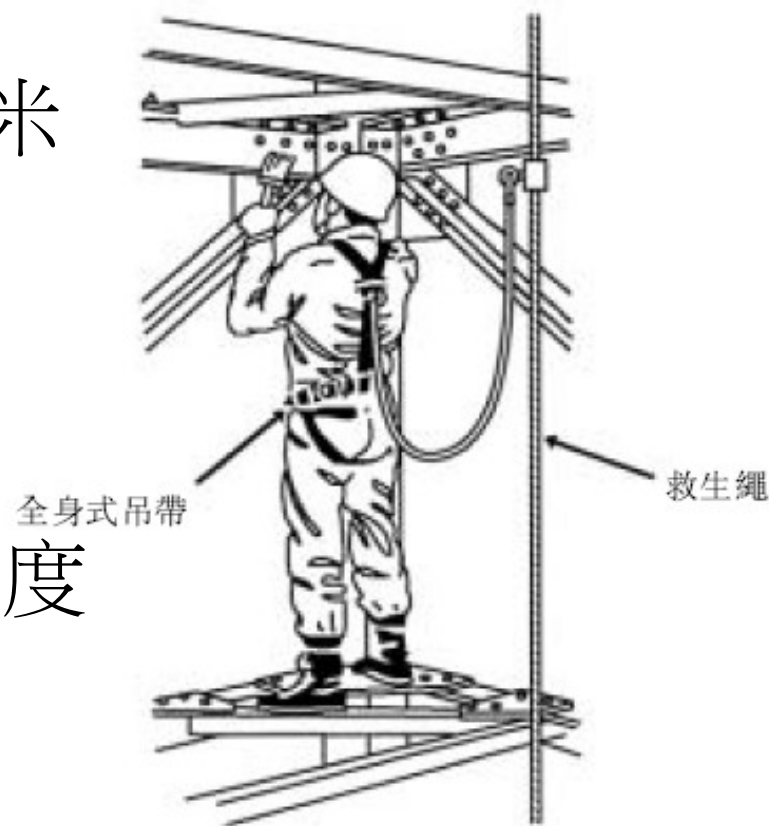
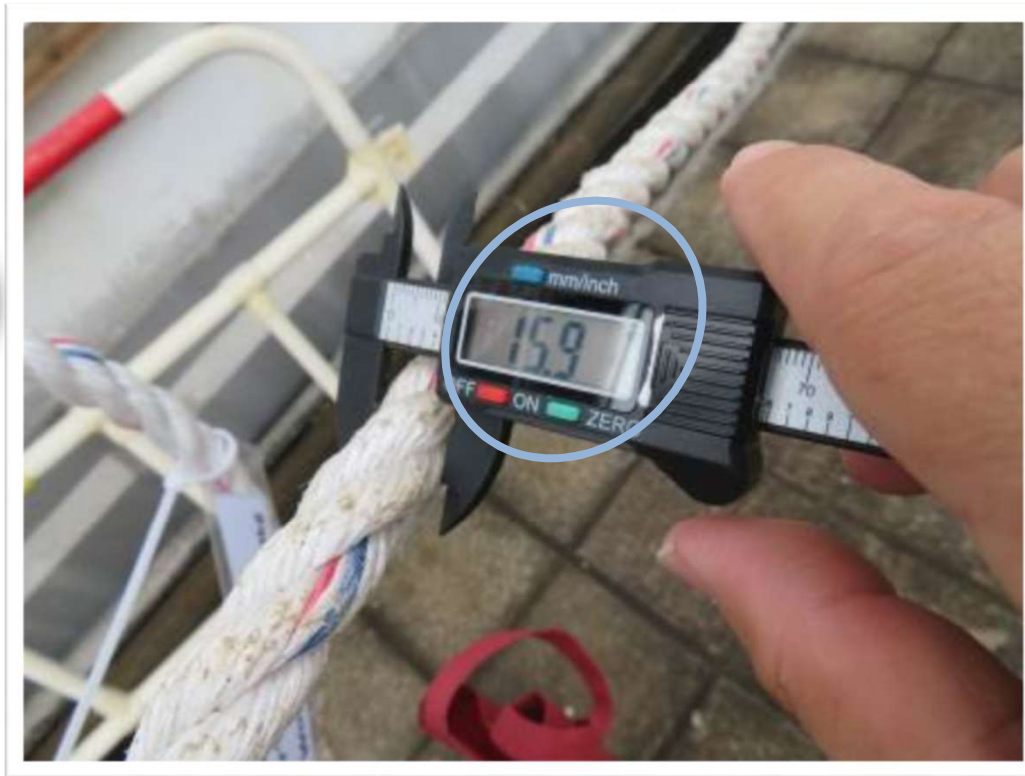


圖 1 全身式吊帶接連獨立救生繩

2.獨立救生繩檢查(續)



o incident



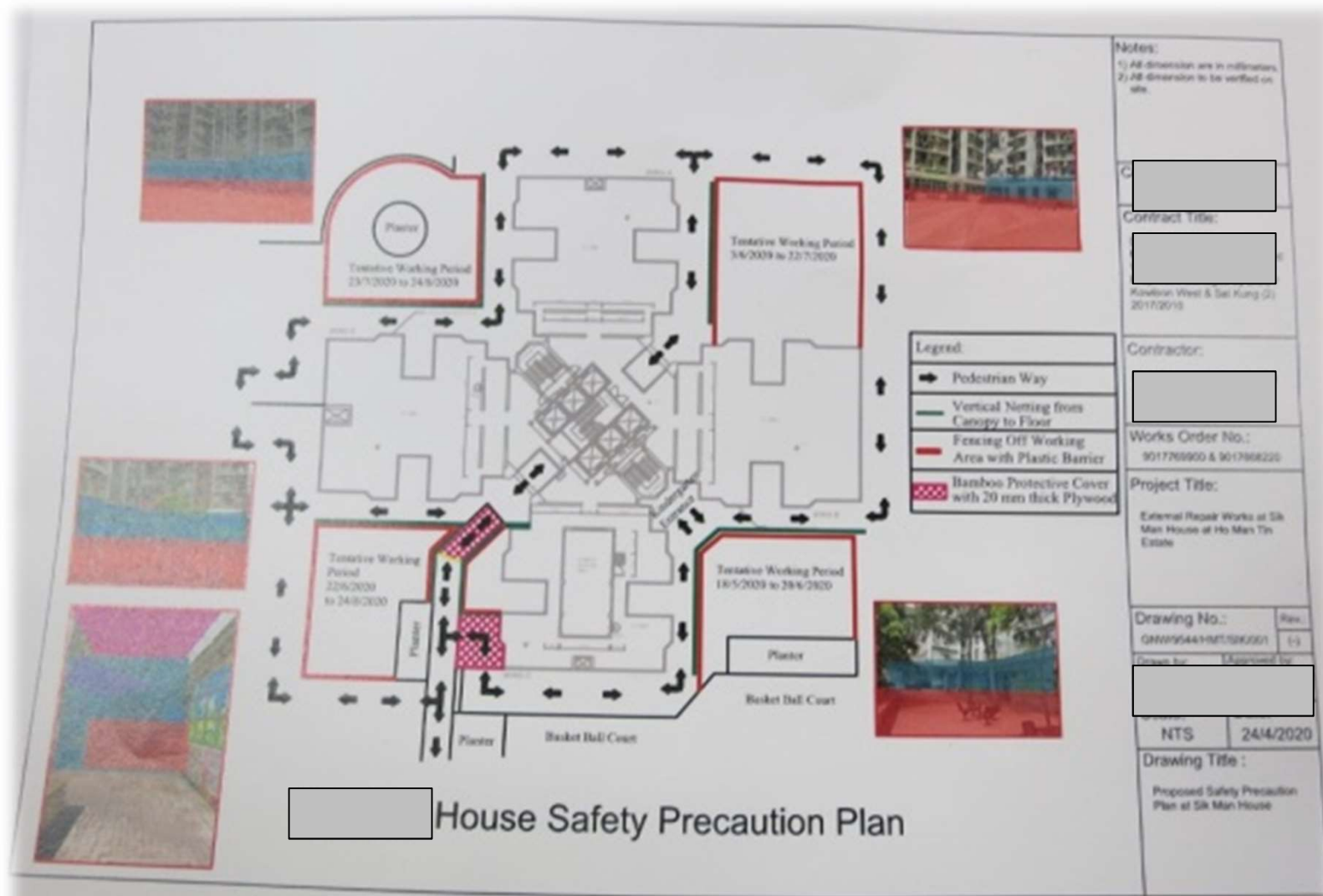
適當選用尾繩

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3. 圍封計劃及上落船位置充分準備

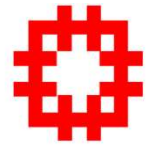


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3.圍封計劃及上落船位置充分準備(續)

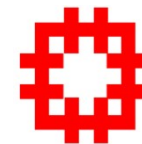


提供有蓋帳篷或通道保護
以加強出入安全



o incident

4.吊船通告和文件



每部吊船的工作平台上清晰易讀地標明：

- 吊船的安全操作負荷
- 每次可載的最高人數
- 同類吊船的適當標記
- 每日開工前須檢查所有繩索
- 表格1 – 吊船的每週檢查證明書 (SWP-F1)
- 表格2 – 吊船的徹底檢驗證明書 (SWP-F2)
- 表格3 – 吊船的負荷測試及徹底檢驗證明書
- 獨立救生繩的牢固點檢驗證明

4.吊船通告和文件



吊船橫幅



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5.零容忍、材料重量參考



o
incident

Material Weight Reference

A rhythmical speech on Zero Tolerance for Gondola

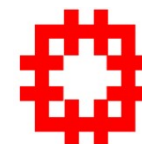
數量	每件重量	總重	工具	總重量
15 件	165 公斤	80 公斤	3 公斤	248

數量	每件重量	總重	工具	總重量
7 件	77 公斤	160 公斤	3 公斤	240

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5.零容忍、材料重量參考



材料重量參考

物料名稱		容量	重量	最大載重數目
洗石水	182	1桶 (20升)	20KG	4桶 (80升)
防霉水	A066AF	1桶 (20升)	20KG	4桶 (80升)
內外牆封底漆	AN188	1桶 (20升)	24KG	4桶 (80升)
外牆乳膠漆	AX1000	1桶 (20升)	25KG	4桶 (80升)
外牆紙皮石	---	1盒	25KG	4盒 (100KG)
UNICELL 40	---	1包	25KG	3包
UNICELL WF	---	1包	25KG	3包

** 吊船最高載重 250 KG。

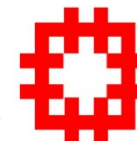
** 預算 2位工人共重 150 KG。

** 以上載重數量只適用攜帶單一材料作為參考用。

如需攜帶不同物料，所有物料的總重量不可多於 100KG。

o incident

6.吊船 - 九大簋口訣



嚴格遵從 - 吊船-零容忍(第一階段) - 口訣

負載 勿超重 	吊船 咪亂裝 	隔開 接地線 
夾架 跟圖安 	協助 上落船 	高掛 防墮扣 
繫穩 救生繩 	電線 無破損 	電箱 要上鎖 

Strict Compliance – Zero Tolerance for Gondola

嚴格遵從 - 吊船-零容忍

Stage 1 – effective from 09 April 2018

No.1 – Erection and Use of shels (吊船及操作吊船)  Notice with sufficient safe working load information 告示須列明吊船的安全操作負荷、吊載人數等資料	Gondola overloaded with excessive accessories and debris 
Gondola setting and installation complied with approved submissions and drawings 	Installation of unauthorised outside and window board 
With proper isolation between emergency metal part and lightning protection component 	Improper emergency metal part connect to existing lightning protection component 

Strict Compliance – Zero Tolerance for Gondola

嚴格遵從 - 吊船-零容忍

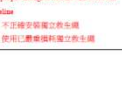
Stage 1 – effective from 09 April 2018

No.1 – Erection and Use of Gondola (吊船及操作吊船)  U-clamp for tie back wire and lifelines in compliance with approved drawing / submission 根據已批准文件及圖則安裝 U 型夾扣及繫立救生繩	Non-compliant U-clamp fitting NOT in accordance with approved drawing/submission 
Gondola can easily be loaded over the projection with the help of co-workers at ground level 	Workers in gondola were found sitting improperly without the help of co-worker at ground level 

Strict Compliance – Zero Tolerance for Gondola

嚴格遵從 - 吊船-零容忍

Stage 1 – effective from 09 April 2018

No.2 – Erection and Use of Gondola (吊船及操作吊船)  Full body harness and full arrester properly attached to independent lifeline at high level 使用全身式安全帶及全副緩衝器正確地在獨立救生繩上 (高層低用)	Full arrester not function freely as found hindered or restrained to independent lifeline also not at high level 
Properly fixed lifeline in good condition (clear marking)  1. 正確安裝獨立救生繩 2. 使用適合良好工作狀態獨立救生繩	Improper fixing of lifeline  Worn out lifeline  1. 不正確安裝獨立救生繩 2. 使用已磨損變質獨立救生繩

Strict Compliance – Zero Tolerance for Gondola

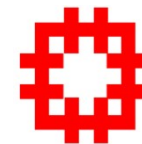
嚴格遵從 - 吊船-零容忍

Stage 1 – effective from 09 April 2018

No.3 – Temporary Electricity Supply (臨時電力供應)  Electric cable in good condition and display with warning label 電纜表面沒有破損並已貼上警告告示	Damaged electric cable 
Control panel/distribution board properly locked  Control panel was not properly locked when gondola in lifting position 	Control panel was not properly locked when gondola in lifting position 

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7.安全使用手推車口訣

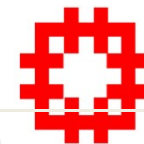


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上落 要小心 OK!	擺放 要穩固 OK!	散貨 要綁好 OK!
	安全使用手推車 	
堆疊 要穩妥 OK!	路線 勿阻擋	
		
重心 勿後傾	泥頭 勿滿瀉	載貨 勿傾側

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8.防止墮物及保護 - 可調節工具繩/手繩



對公用設施的保護



可調節工具繩/手繩



圍欄和公眾安全保護



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9.墜重物的安排



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10.吊船結構與核准圖則現場核對



Incident



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11.吊船外角配有保護墊



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12.提供滅火設備

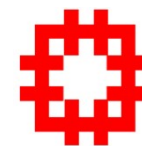


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(A)吊船檢查 - 地面



向工人提供
安全負載信息



控制箱上鎖



安排墜重物



提供滅火設備



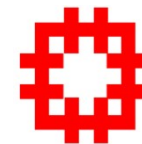
展示高空工作告示



重新設置臨時
觸覺引導路徑

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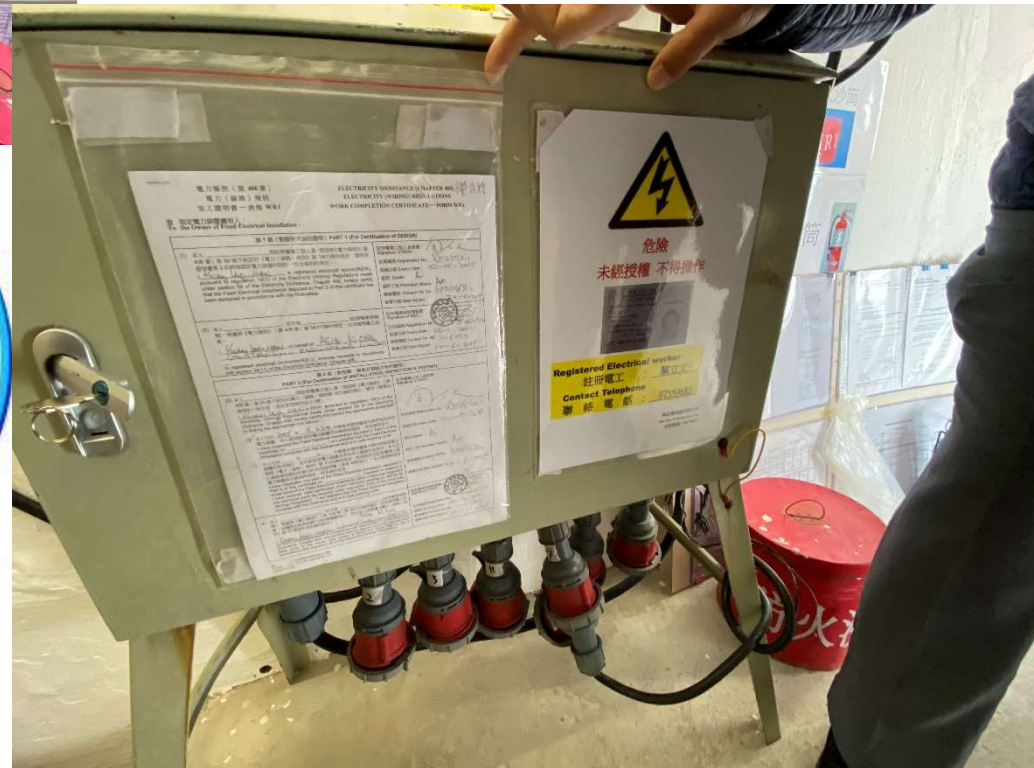
(B)監督要點・天面



13. 臨時供電箱
14. 吊船支架結構與核准圖則現場核對
15. 塞古和7字夾
16. 有眼螺栓及救生繩檢查
17. 鋼絲纜索檢查
18. U 型夾保護墊牢固保護U 型夾支架

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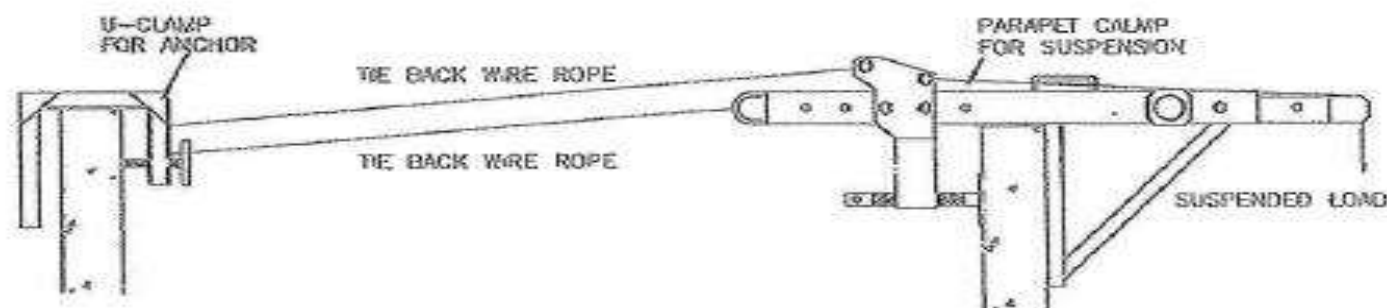
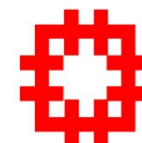
13.臨時供電箱



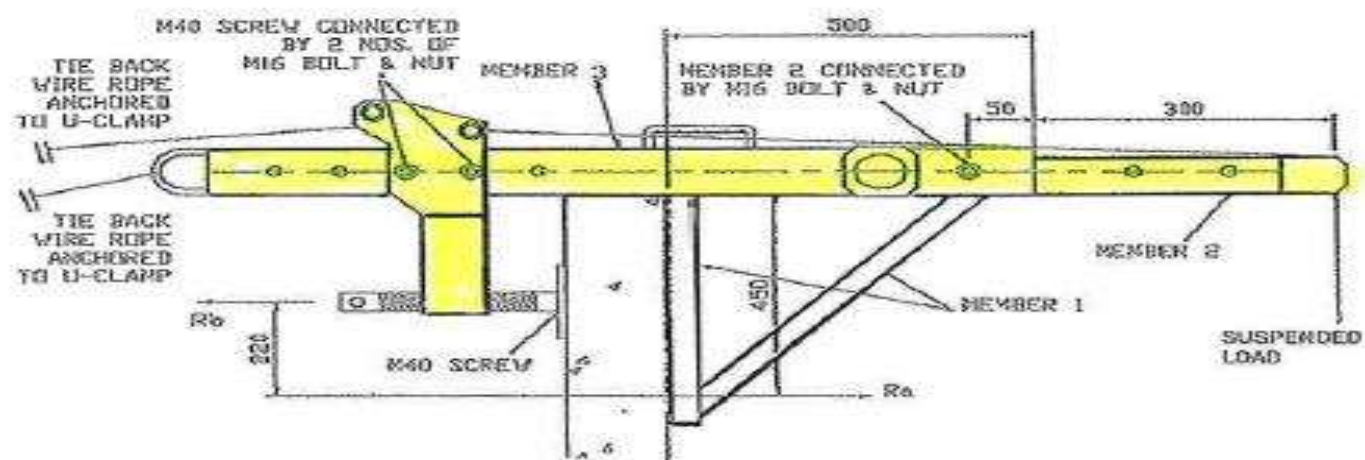
WR1/ WR1A
電箱線路圖
法定電擊告示
註冊電工姓名及聯絡電話

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14.吊船支架結構與核准圖則現場核對

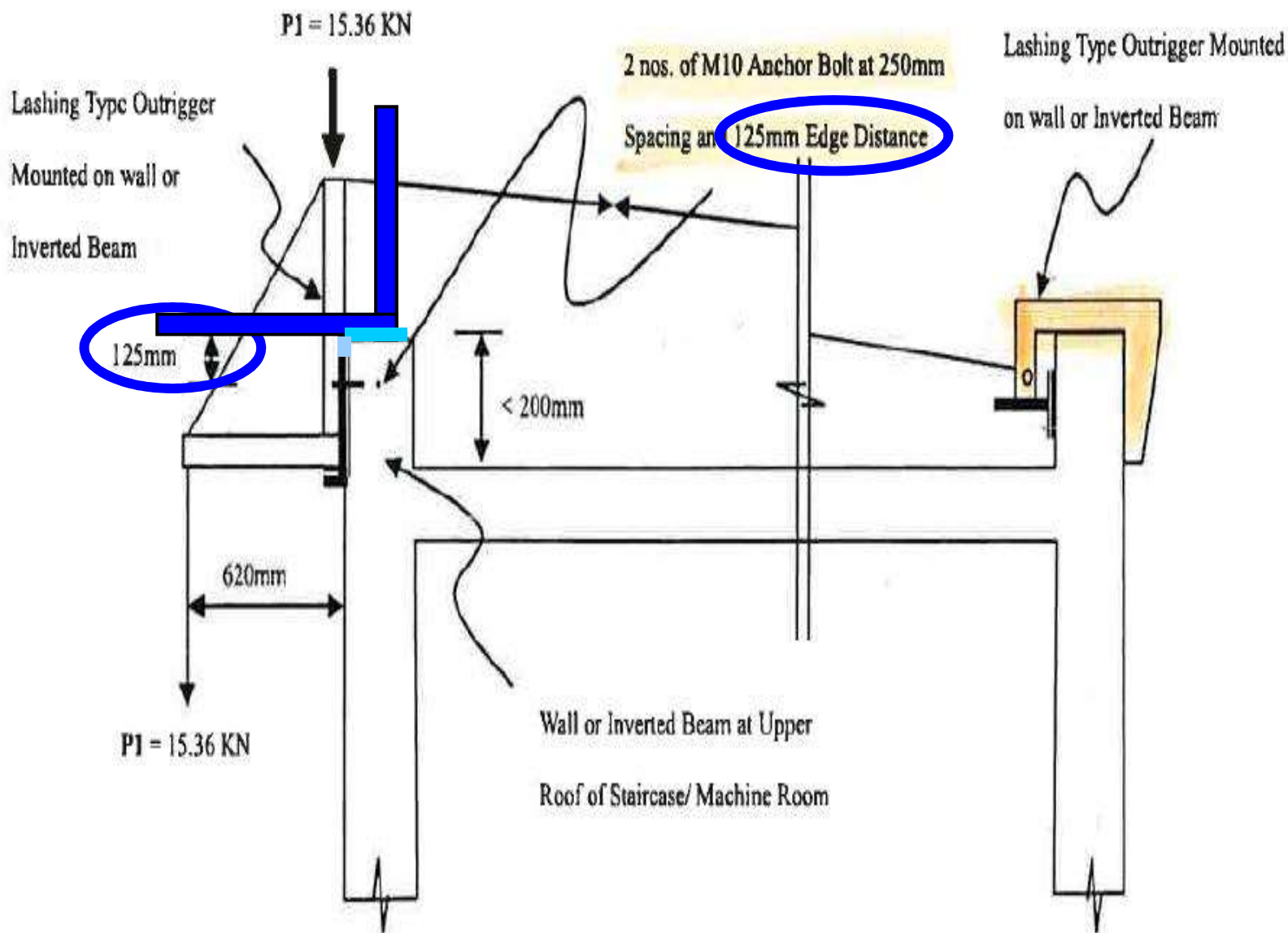
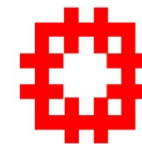


GENERAL ARRANGEMENT
(PARAPET CLAMP CONNECTED WITH U-CLAMP)



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14. 吊船支架結構與核准圖則現場核對(續)



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15.塞古和7字夾

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注意事項：

- 不可用普通螺栓代替原有的鈎環杆
- 確保螺栓杆完全鎖上
- 如在吊運時，可導致杆轉動使不應選用螺栓杆類形鈎環
- 在吊運時不可令鈎環側向一邊
- 鈎環杆應經常扣在吊鈎上
- 可使用金屬圈固定鈎環位置

物件移動可令螺栓鬆脫

金屬墊圈 吊鈎



7字夾

5.2.2 Wire rope slings - cable clip

The cable clip shall be properly installed according to the following points:

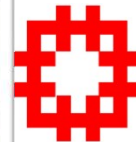
- The wire rope sling is equipped with thimble.
- There is a minimum of 3 cable clips.
- The direction of installation shall be correct.
- The distance between the cable clips shall be the same.

Thimble



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16.有眼螺栓及救生繩檢查



工務處
Department of Labour for the purposes of regulation 18(1)(e) of the Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations

工廠及工業經營(起重機械及起重裝置)規例
關於鏈條、纜索及起重裝置
在過往六個月內進行的徹底檢驗結果證明書
本表格乃由勞工處處長就工廠及工業經營(起重機械及起重裝置)規例第 18(1)(e) 條的需要而認可

Description of chain, rope or gear, e.g. type, size and identification mark 鏈條、纜索及起重裝置的說明， 例如：類別、尺寸及識別標誌	Date of examination 檢驗日期	Safe working load (tonnes) 安全操作負荷 (以公噸為單位)	Result of examination Enter details of repairs required If none enter "None" and state working order 檢驗結果，註明所需進行的修理 如無不安，則填「無」字並註明是否
(1)	(2)	(3)	(4)
Safety lifeline 16mm P.P rope individually tied to M16 eye bolt which fixed at concrete wall Owners Making : 1B	05-03-2022	0.5T	"None" In Safe Working Order

I hereby certify that the gear described in this certificate was thoroughly examined by me on 05-03-2022 and that the above particulars are correct.
茲證明本人曾於 05-03-2022 徹底檢驗本證明書所指的起重裝置，且上述各項均屬確實無訛。

Signature of Registered Professional Engineer
註冊專業工程師簽署
Mac BENG MHKIE RPE(STL)
(Reg. No. [redacted])

Date of certificate
簽發日期
05-03-2022

Qualification
註冊資格
Structural

Discipline
註冊界別
RP0 [redacted]

Any competent examiner or competent person who delivers to an owner a certificate or makes a report which is to his offence and shall be liable on conviction to a fine of \$200,000 and to imprisonment for 12 months.
任何合資格檢驗員或合資格的人，如向擁有人交付他明知有任何要項屬虛偽的證書或報告，即屬犯罪，一經定罪，可處罰款二十萬元及監禁十二個月。

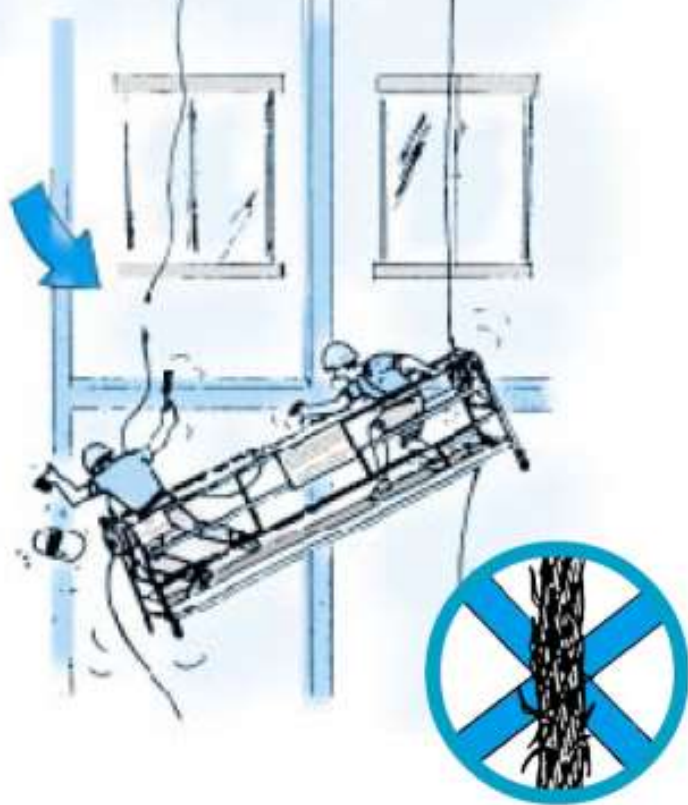
LALG-F7

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17. 鋼絲纜索檢查



不可使用有任何扭結、扭曲、有顯著的磨損或腐蝕跡象的鋼絲纜索



生鏽、有扭結或損毀的纜索是十分危險的，
須立即更換。



o incident

18.U 型夾保護墊牢固保護U 型夾支架

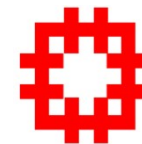


Incident



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(B)吊船檢查-天面

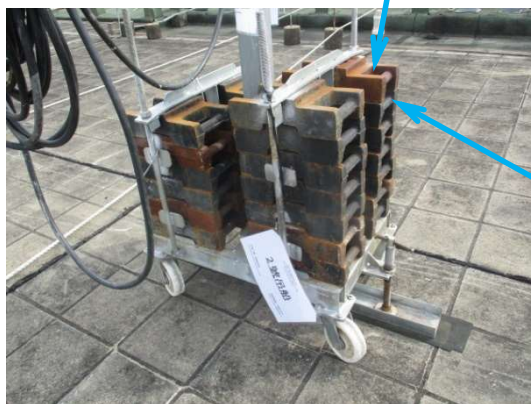


車仔架櫃顯示重量資料

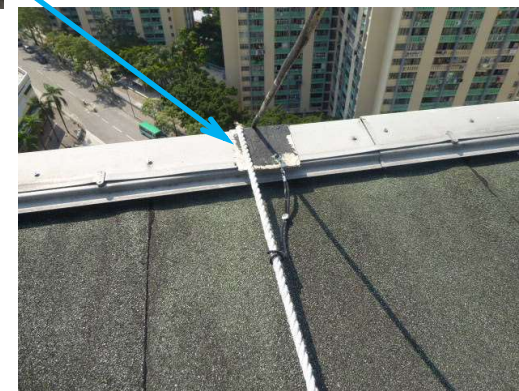


收夾鋼索尾部

檢查車仔架結構乎合核准圖則



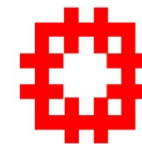
在車仔架顯示重量和「請勿移動」及鎖定支架



為獨立救生繩提供保護

o incident

(C)測試要點



19. 吊船控制箱絕緣板安裝妥當
20. 保護網阻燃測試
21. 防傾側測試
22. 載重測試
23. 工友協助升降吊船演練
24. 吊船升降和著陸程序、裝載和傾斜試驗

o
incident

19.吊船控制箱絕緣板安裝妥當



○ incident



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20.保護網阻燃測試

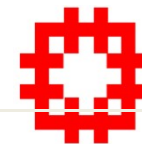


○incident



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21.防傾側測試



22.載重測試 - 核對材料重量參考



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23. 工友協助升降吊船演練



o incident



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24. 吊船升降和著陸程序、裝載和傾斜試驗

記錄予新工友作圖示參考試驗

o incident





Safety is Everybody's Responsibility

**A Passion for People & Environment
Nurturing a Caring & Safety Culture**

Thank You

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