

地盤地台隆 安全防護計劃

工地安全研討會2019
3/7/2019



瑞安建業
SOCAM DEVELOPMENT

瑞安承建有限公司
Shui On Building Contractors Limited

瑞安建業有限公司成員 A member of SOCAM Development Limited

地盤地台隆安全防護計劃書

計劃書內容：

- 地台隆分佈圖及地台隆安全措施總覽表
- 工作分配及職責
- 地台隆分類及防護標準
- 安裝永久設施期間的臨時保護
- 制定檢查系統

地盤地台隆安全防護計劃書

什麼時候制定/修訂

制定 - 第一層樓面落石矢前兩個月或；
- 出 CBWD 後兩星期內。

修訂 - 每月覆審地台隆分佈圖及地台隆安全措施總覽表或；
- 收到改圖通知。

地台窿分佈圖及地台窿總覽表

- 屋宇裝備工程師及工程主任參考Combined Builder's Works Drawings (CBWD) 制定一份「地台窿分佈圖」及制定「地台窿安全措施總覽表」的甲部，完成後轉交安健環主任繼續填寫乙部內容。

隆台地 分佈圖



地台窿安全措施總覽表



瑞安承建有限公司
Shui On Building Contractors Limited
啟德地盤3G11轉營計劃

地盤地台窿安全措施總覽表

地盤： _____ 座/區/樓層： _____
製表人： 一) 屋宇裝備工程師： _____ 三) 安健環主任： _____
二) 工程主任： _____
跟進防護工作： _____ 監察： _____ 製表日期： _____

甲部				乙部				備註
地台窿編號	層數	位置	地台窿面積	防護標準			輔助防護措施	
				防護標準1 以6分木板或1分厚鐵板覆蓋，覆蓋物需於地台窿四邊50mm以上最少要維持二邊覆蓋，否則另作支撐或固定)	防護標準2 以6分木板或1分厚鐵板覆蓋，並需加設最少兩條2"x4"枋作支撐及定位，而覆蓋物及木枋均需大於地台窿四邊150mm以上	防護標準3 安裝穩固上中圍欄及踢腳板作全面圍封	(A) 張貼警告告示 (B) 加設閃燈或螢光指示	(C) 設置照明 (D) 設防護網 (F) 防水

如地台窿的長小於150mm或50mm，則不需填寫此表格)

填報人： _____ 工程經理： _____

地台窿安全措施總覽表



瑞安承建有限公司
Shui On Building Contractors Limited
威德坊及161號商業計劃

地盤地台窿安全措施總覽表

地盤：_____ 座/區/樓層：_____

製表人： _____
 一) 屋宇裝備工程師： _____ 三) 安健環主任： _____
 二) 工程主任： _____
 跟進防護工作： _____ 監察： _____ 製表日期： _____

地台窿編號	層數	位置	地台窿尺寸	防護標準			輔助防護措施			備註
				防護標準1	防護標準2	防護標準3	警告告示	圍欄	設防護網	
R001	G	商場	2500x1000		✓		✓			
R002	G	商場	1500x1000		✓		✓			
R003	G	商場	1500x1500			✓	✓		✓	✓
R004	G	商場	1625x800		✓		✓			
R005	G	商場	1290x700		✓		✓			
R006	G	商場	1800x1150		✓		✓			
R007	G	商場	2450x2350			✓			✓	
R008	G	商場	300x300	✓			✓			
R009	G	商場	2065x700		✓		✓			
R010	G	商場	2000x2000			✓	✓		✓	
地台窿面積				相應建議防護標準						
短邊150 - 600mm		防護標準1	以6分木板或1分厚鐵板覆蓋，覆蓋物需於地台窿四邊150mm但最少要保留三邊覆蓋，否則另作支撐或固定							
短邊600 - 1200mm		防護標準2	以6分木板或1分厚鐵板覆蓋，並需加設最少兩呎2"X4"木作支撐及定位，而覆蓋物及木枋均需大於地台窿四邊150mm以上							
短邊大於1200mm		防護標準3	安裝穩固上中圍欄及踢腳板作全面密封							

(如地台窿的尺寸少於150mm x 150mm，則無需填寫此表格)

填報人： _____ 工程經理： _____

工作分配及職責

工程經理

- 檢閱及簽發「地台窿安全措施總覽表」；
- 投放資源，使地台窿安全措施得以落實；
- 監督各部門執行計劃內容；

地盤總監

- 跟進計劃的執行情況；
- 督導屋宇裝備工程師及工程主任，確定 Combined Builders Work Drawing (CBWD) 及預留施工地台窿的分佈情況；

屋宇裝備工程師

- 與業主確定 CBWD 的進度；
- 呈交 CBWD 予地盤總監及工程主任；
- 根據 CBWD 及預留施工地台窿分佈，以制定地盤「地台窿分佈圖」；
- 填寫「地台窿安全措施總覽表」甲部；

工作分配及職責

工程主任

- 協助提供預留施工地台隆分佈予屋宇裝備工程師；
- 執行計劃內容及跟進「地台隆安全措施總覽表」；
- 指導前線管工執行細節；
- 監察執行情況。

管工

- 根據分佈圖及地盤「地台隆安全措施總覽表」執行安裝及保養工作；
- 每日巡查有關位置。

安健環主任

- 協助制定計劃書；
- 填寫地台隆安全措施總覽表乙部；
- 向前線管理人員講解計劃內容；
- 跟進計劃執行情況；
- 每星期進行巡查實地執行情況。

地台窿分類及防護標準

(一) 地台窿短邊為 150mm 至 600mm：

- 以六分夾板或一分厚鐵板覆蓋，並塗上黃色底及紅色“危險/DANGER”字樣；
- 覆蓋物料須確保地台窿四周最少有150mm闊度作承托，且最少要有三邊覆蓋，否則需另作支撐或牢固；
- 所有地台窿覆蓋物必須穩固，不易被移走或踢走；
- 如有需要亦可加設防水措施，如封英坭沙、打膠等。



地台窿分類及防護標準

(二) 地台窿短邊為 600mm 至 1200mm：

- 以六分夾板或一分厚鐵板覆蓋，並塗上“危險/DANGER”字樣；
- 覆蓋物需加設最少兩條 2” x 4” 枋作支撐及定位；
- 覆蓋物料須確保地台窿四周最少有 150mm 闊度作承托，且最少要有三邊覆蓋，否則需另作支撐或牢固；
- 所有地台窿覆蓋物必須穩固，不易被移走或踢走；
- 如有需要亦可加設防水措施，如封英坭沙、打膠等。



地台窿分類及防護標準

(三) 地台窿短邊為1.2m以上 或

小於1.2m 但不能被覆蓋：

- 裝上穩固塗有黃色的上中圍欄及踢腳板作全面圍封；
- 並在當眼位置寫上紅色“危險/DANGER”字樣；
- 必要時鋪設防墮網；
- 樓隴內位置則需設置儲電式照明。

安裝永久設施期間的臨時保護

地台窿短邊少於 1.2m 以下

- 設計一套覆蓋方法，盡可能不妨礙安裝永久設施，確保任何時間均有足夠保護；
- 如未能提供有效覆蓋方法，則必須提供臨時圍欄。

地台窿短邊大於 1.2m 以上

- 必須在地台窿以外位置安裝穩固黃色圍欄；
- 在附近牆身或穩固位置安裝足夠救生繩錨點，而進入圍欄以內的工人必須佩戴安全帶連接已錨定的救生繩。

安裝永久設施期間的臨時保護

- 不妨礙安裝永久設施的覆蓋方法例子（第一代）：



安裝永久設施期間的臨時保護

- 不妨礙安裝永久設施的覆蓋方法例子（改良版）：



制定檢查系統

- 管工每日巡查有關地台窿情況，並安排相應的跟進及保養工作；
- 安全主任每星期進行工地巡查，將巡查發現及跟進意見，與地盤團隊緊密聯繫；

現場問答（一）

- 剛才提到短邊為 600mm 以下的地台隆，需要用六分板或一分鐵板覆蓋；那麼，該類地台隆四周最少要有闊度多少毫米作承托？

答案：**150 mm**

現場問答（二）

- 剛才提到短邊為多少米以上的地台隆，需要安裝圍欄及踢腳板呢？

答案：

1.2 m

Here is the footage of

“Safety Forum 2019 for Works Contracts and Property Services Contracts”

which was held on 3 July 2019

by the Hong Kong Housing Authority

The Speaker is

Mr. Chan Ka Yeung Senior Project Manager

Shui On Building Contractors Limited

His topic is Floor Opening Safety Program

Next, may we invite

Senior Project Manager of Shui On Building Contractors Ltd

Mr. Chan Ka Yeung

to share with us

Mr. Chan, please

Greetings

I am the senior project manager from Shui On Building Contractors Ltd

Chan Ka Yeung

I am happy our company is invited to introduce to you

I am happy our company is invited to introduce to you

Floor Opening Safety Proposal

Floor openings are holes in the floor

I use the term floor openings for easy understanding

For the limitation of time

and hoping not to delay the tea party following the forum

I will be very fast in my introduction

Why introducing floor openings?

In the past, the industry has experienced

when these openings were not properly fixed

fatal accidents could occur

Falling from the openings could kill the worker's life

Floor Opening Safety Proposal

There are 5 parts to the proposal

First is Floor Opening Distribution

and Safety Measures Overview

Second is work distribution and staff responsibilities

Third, floor opening categories and safety measures

These are 2 important points

Floor openings in different sizes

are separated into 3 safety measures

Also we have temporary closures protection

and later to be opened some day for permanent fixing

What suggestions are there in our proposal?

We will introduce them

Also the plan to supervise and scrutinise

And when to do this proposal?

Simply, it is two months before concreting the 1st floor

or 2 weeks after CBWD is ready

What is CBWD?

That is Combined Builder's Work Drawing

We draw up a review timetable

We draw up a revision review timetable

including monthly review on Floor Opening Distribution

and Safety Measures overview

We will often receive revised distribution of openings

Very often, planning will change during the construction period

Earlier located openings

might shift in the mid or late phases

Openings might disappear or increase

Therefore we need to do revision work

Floor Opening Distribution and Opening Overview

require 2 persons to be in charge

The building services engineer (BSE)

and general formman refers to the CBWD

to draw up a Floor Opening Distribution and

Floor Opening Safety Measures Overview

Section A

Section A will come up later

This is the distribution of floor openings

You can see the floor plan of Block One

There are different floor openings

In Section A, every opening has a name

number, building floor, location and size

The general foreman and the BSE

are in charge of these 2 sections

We have different measures for Section B

There are 3 safety measures

and other measures

such as warnings, illumination, waterproof works etc

Regarding responsibilities

in fact, this Floor Opening Overview

is of the responsibility of everyone

The whole site is held accountable

The project manager has several duties

The most important is the devotion of resources

Regarding the site director

he needs to supervise the execution of the proposal

Regarding the BSE

I just explained his duties and will not repeat here

They formulate Floor Opening Distribution

and fill out Section A of Floor Opening Safety Measures Overview

The general foreman and BSE have similar duties

They will also lead the frontline foremen to execute details

Regarding the foremen

they work according to the Floor Opening Safety Measures Overview

to carry out installation and maintenance works

They are responsible for carrying out daily safety inspection

Safety, Health and Environment officer explain to frontline management

the contents of the proposal

and follow up implementation progress

Regarding safety inspection

they follow up every week

the implementation progress of the proposal

I mentioned earlier, the most important part

I divided the floor openings into 3 categories

They include the major or all opening sizes

First is the opening with short side of 150-600mm

For this size, we use 20mm thick plywood boards

or 1 point or 3mm thick iron sheets to cover the opening

and in red against a yellow background writing "DANGER"

On the periphery, the support must be no less than 150 mm

Remember it needs to be at least 150 mm, covering at least 3 sides

Otherwise, other support or reinforcement will be needed

The cover must be firm, not easily kicked away

If necessary, add waterproof materials

e.g. cement sand or sealant to seal the edge of the cover

Second is the floor opening with a short side of 600-1200 mm

the procedures are similar to the first category

But the openings are bigger, the first type is of 150-600mm

Now it is of 600-1200mm

Under the cover, there is the need to add

at least two 2"x4" wood braces

That is, 50mm x 100 mm wood braces

to support and stabilise the location

Other procedures are the same as the first category

Third is the biggest, the short side is above 1.2m

or side under 1.2m which

cannot be covered with boards or other materials

The method is around the hole, put up medium guard rails

and toe boards to completely surround the opening

Cover the opening with yellow wood boards or metal plates

Put up "DANGER" signs

If necessary, put anti-fall nets underneath

If the opening is inside the building

use illumination run by batteries

I mentioned just now

eventually temporary covers of floor openings' will be removed

to put in permanent fixtures

Meanwhile, how do we provide temporary protection for workers there?

If the short side of the opening is under 1.2 m

without hindering installation

design a cover to provide sufficient all-time protection

If this cannot be done, then provide temporary guard rails

That is the third method

which can also be used to enhance the 1st and 2nd methods

If the short side of a floor opening is bigger than 1.2m

we must put yellow guard rails outside the opening

That is the same as the third method

This will not obstruct permanent ways of covering the openings

This is the first generation

From the picture

we can see a box with a cover that opens on top

The latest generation is like this

In the left picture, it is covered

In the right picture, when temporary fixture is demolished

Open the cover, the fixture is connected with the pipe

It is thus not required to remove the cover

And we can continue with the related work

Regarding setting up an inspection system

There is a plan executed by the staff

How is inspection carried out?

it was mentioned just now that foremen will do daily safety inspection

to see the situation of floor openings

and arrange follow-up and maintenance work if necessary

Every week, safety officers carry out site safety inspection

Opinions and follow-up tasks will be shared with the team on site

This ends today's sharing

It was mentioned just now there is a question for everyone

After this question, refreshments will be served

I have mentioned the answer in my presentation

Can I be the MC?

No problem

It was mentioned just now

if the short side of a floor opening measures 600mm

it needs an 20mm wood board or 3mm metal plate to cover it

Then for this opening

what is the shortest width in mm necessary for support?

I see this guy has raised his hand from beginning

150mm

Correct

It is 150mm

Thank you

Thank you , Mr. Chan, for sharing

Please be seated

We understand on sites there are lots of potential hazards

We must be careful, take all safety measures

Ensure workers' safety

We have listened to the first section of the forum

The rich contents have reaped plenty of benefits for us

We will take a 20-minute break now

Drinks are served outside the hall

At the same time

do visit the opposite room for

OSHC safety equipment exhibition

Thank you for watching