



工程指示 / 要求簡箋(E.I.)

工程指示編號：EI/10039 / 18

修改版次：-

工程編號：J - 837

工程名稱：觀塘裕民坊

工程項目：幕牆 防水片(T1-T5 樣板層用)

收件人：生統

發件人：Eric Liu

日期：14/12/2018

要求提供 / 確認 事項：

- | | | |
|------------------------------------|-------------------------------------|-------------------------------|
| <input type="checkbox"/> 初步鋁料 B.M. | <input type="checkbox"/> 加工拆圖，然後生產 | <input type="checkbox"/> 尺寸表 |
| <input type="checkbox"/> 正式鋁料 B.M. | <input type="checkbox"/> 技術上資料 / 指示 | <input type="checkbox"/> 報價 |
| <input type="checkbox"/> 配件 B.M. | <input type="checkbox"/> 樣辦或貨品說明書 | <input type="checkbox"/> 分判合約 |
| <input type="checkbox"/> 其他：_____ | | |

內容：

請生產防水片送地盤 7/F。 (4 座有 50 個單位, 50X2=100 件)

注意 1. 共四款，每款 100 件，有分左右，合共 400 件。

2. 要有摺腳，所有摺腳 10mm。

3. 全用 1.5mm 鋁板摺，可用鋁焊。

4. 生統如需要加工圖，請永林提供。

5. 附上安裝示意圖。

請在 2018/12/21 送到。

永林：其線防水片未有行清覆核
及請提供拆圖。謝謝

附：4 頁加工圖 36 頁 + Smoke seal report 參考用

以上項目為：

- 原合約工程包 原合約工程加 / 減賬 新工程報價

原因：-

分發東莞各部門：

- () 生產技術總監 連附件 () 技術部 連附件 永林 () 生產部 連附件 () 機械設計部 連附件
 () 採購部 連附件 () 生產統籌部 連附件 梅
 () 質檢部 連附件 () 會計部 連附件 () 報關組 連附件 () 其他 楊榮輝 連附件

分發其他分判：
() 王禮秋 連附件

分發香港各部門：

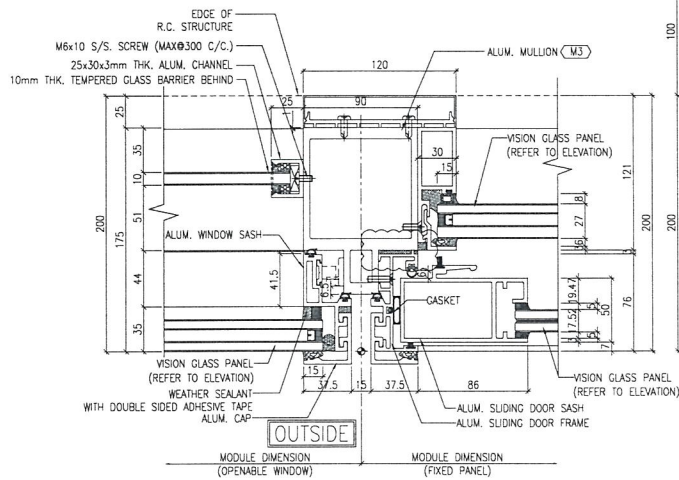
- () 行政部 連附件 () 會計部 連附件 () 統籌部 連附件 () 工程部地盤科文 連附件 炳哥/祥哥/民
 () 採購部 連附件 () QS 部 連附件 () 維修部 連附件 () 其他 _____ 連附件

傳遞編號：

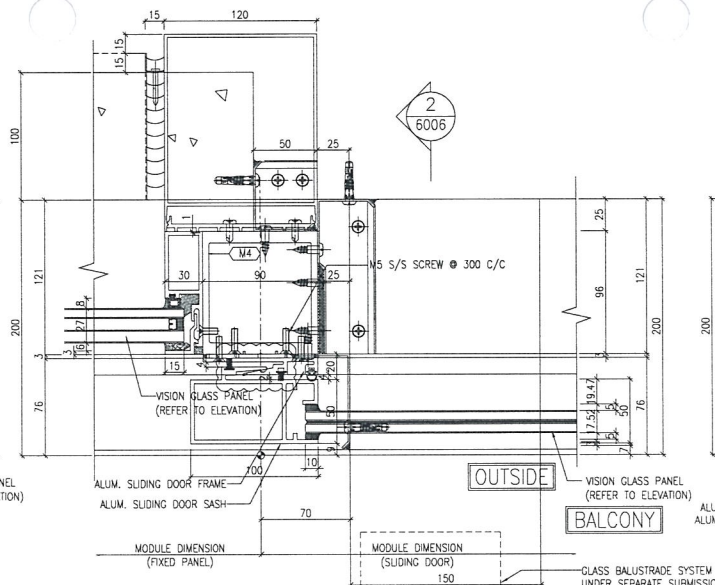
HK 1933 / 18

發件人簽署：

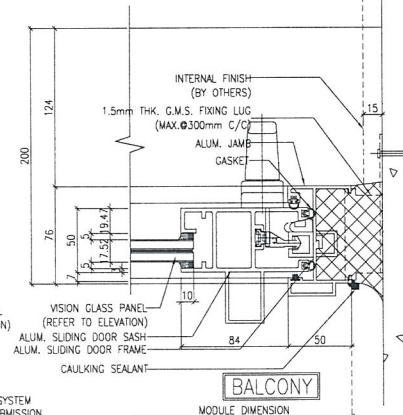
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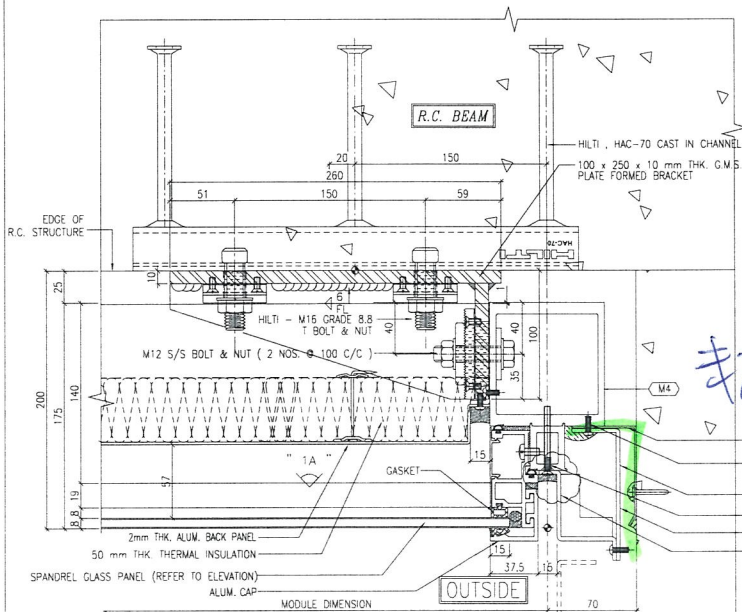
1
5004 TYPICAL MULLION DETAIL
CURTAIN WALL



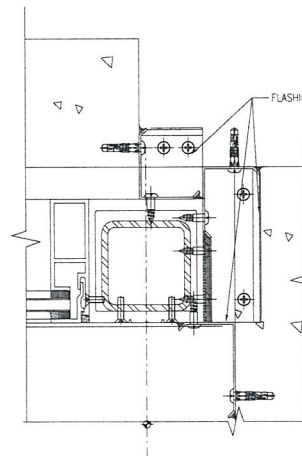
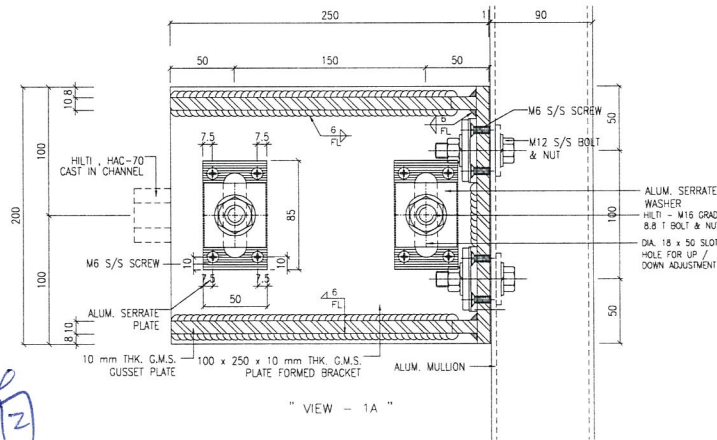
2
5004 TYPICAL MULLION DETAIL
CURTAIN WALL



3
5004 TYPICAL MULLION DETAIL
CURTAIN WALL



4
5004 TYPICAL MULLION DETAIL
CURTAIN WALL



B.D. REF :

CLIENT :
信和置業有限公司
Sino Land Company Limited

ARCHITECT :
WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

MAIN CONTRACTOR :
CR Construction Company Limited

STRUCTURAL ENGINEER :
AECOM

FAÇADE CONSULTANT :
AECOM

NOTE :
1. ALL DIMENSIONS ARE IN mm.
2. ALL ELEVATIONS ARE VIEWED FROM OUTSIDE.
3. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE FABRICATION.

LEGEND :
X1 - DETAIL MARK NO.
X001 - REFER SHEET NO.
1. F.F.L. -- FINISHED FLOOR LEVEL
2. S.F.L. -- STRUCTURAL FLOOR LEVEL
3. (↔) -- REVERSED DETAIL

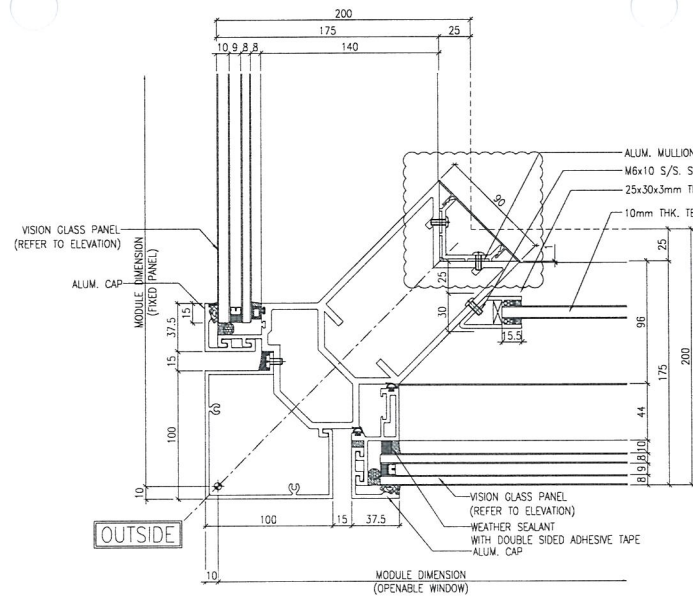
C	04/12/2018	GENERAL REVISED	
B	24/11/2018	GENERAL REVISED	
A	10/9/2018	GENERAL REVISED	
NO.	DATE	REVISED	BY

JOB NO. : J-837
PROJECT :
URA KWUN TONG TOWN CENTRE
REDEVELOPMENT (AREA 2 & 3) AT
NKIL 6514, KWUN TONG, KWLOON

TITLE :
TYPICAL MULLION DETAIL
FOR CURTAIN WALL

DATE : 13-JUL-18 SCALE : 1:2 (A1)
DRAWN BY : 吳特鋁 吳特鋁
CHECKED BY : -

MIDI 吳特鋁有限公司
ALUMINIUM FABRICATOR LTD.
Units 6-8, Sunray Industrial Centre, 1/F
510 Chee Kwee Ling Road, Kowloon
Tel: 23489211-4 Fax: (852) 27727656
DWG NO : JB37-CW-5004 REV : C



1 TYPICAL MULLION DETAIL
5005 CURTAIN WALL

M16 THREAD ROD (GR. 8.8) & NUT (GR. 10) W/ SPRING & FLAT WASHER (2 NOS.)

10 mm THK. G.M.S. GUSSET PLATE

130 x 130 x 10 mm THK. G.M.S. PLATE FORMED BRACKET

2mm THK. ALUM. BACK PANEL

50 mm THK. THERMAL INSULATION

M12 S/S BOLT & NUT (2 NOS. Ø 100 C/C)

ALUM. CAP

OUTSIDE

OUTSIDE

OUTSIDE

OUTSIDE

OUTSIDE

OUTSIDE

OUTSIDE

OUTSIDE

OUTSIDE

OUTSIDE

OUTSIDE

OUTSIDE

OUTSIDE

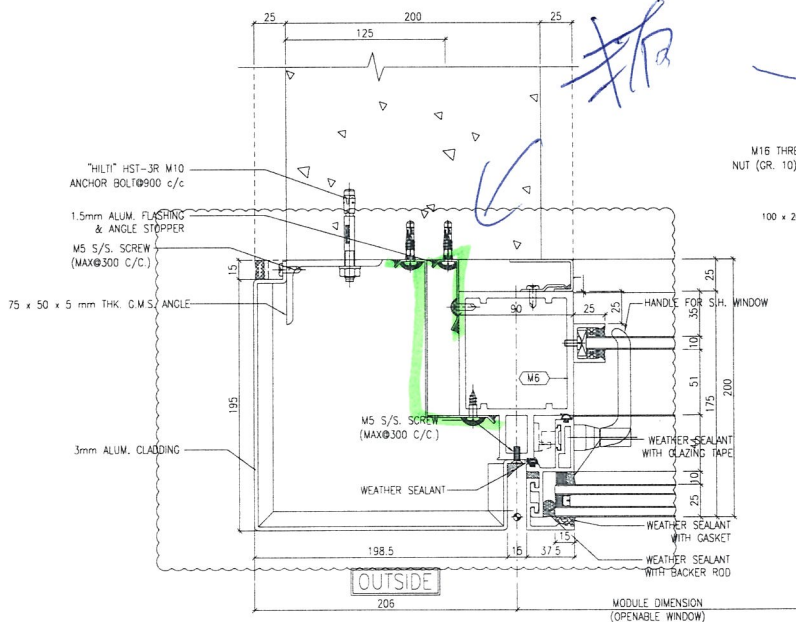
OUTSIDE

OUTSIDE

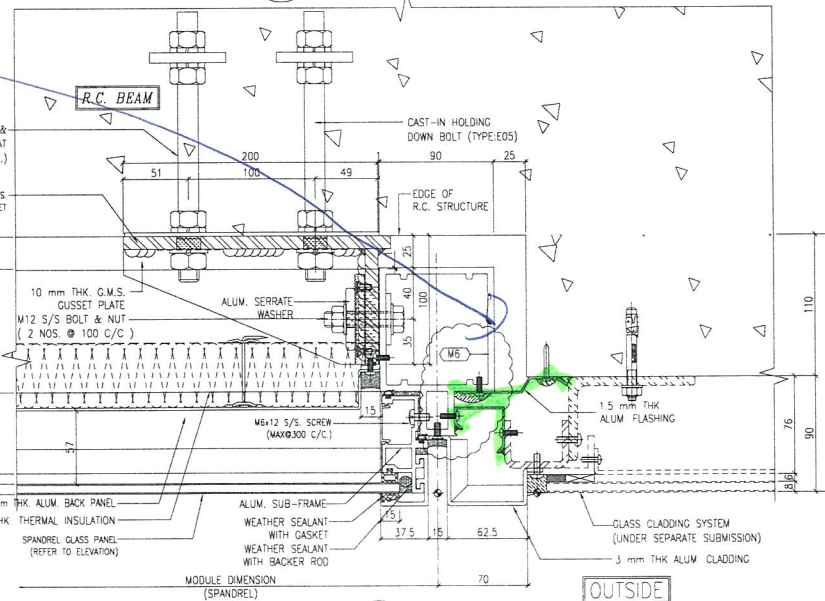
OUTSIDE

OUTSIDE

OUTSIDE



3 TYPICAL MULLION DETAIL
5005 CURTAIN WALL



4 TYPICAL MULLION DETAIL
5005 CURTAIN WALL

B.D. REF :
CLIENT :
信和置業有限公司
Sino Land Company Limited

ARCHITECT :
WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS
WT

MAIN CONTRACTOR :
CR Construction Company Limited

STRUCTURAL ENGINEER :
AECOM

FAÇADE CONSULTANT :
AECOM

NOTE :
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2. ALL ELEVATIONS ARE VIEWED FROM OUTSIDE.
3. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE FABRICATION.

LEGEND :
① - DETAIL MARK NO.
② - REFER SHEET NO.
1. F.F.L. -- FINISHED FLOOR LEVEL
2. S.F.L. -- STRUCTURAL FLOOR LEVEL
3. Ⓜ -- REVERSED DETAIL

B	24/11/2018	GENERAL REVISED	
A	10/9/2018	GENERAL REVISED	
NO.	DATE	REVISED	BY

JOB NO. : J-837

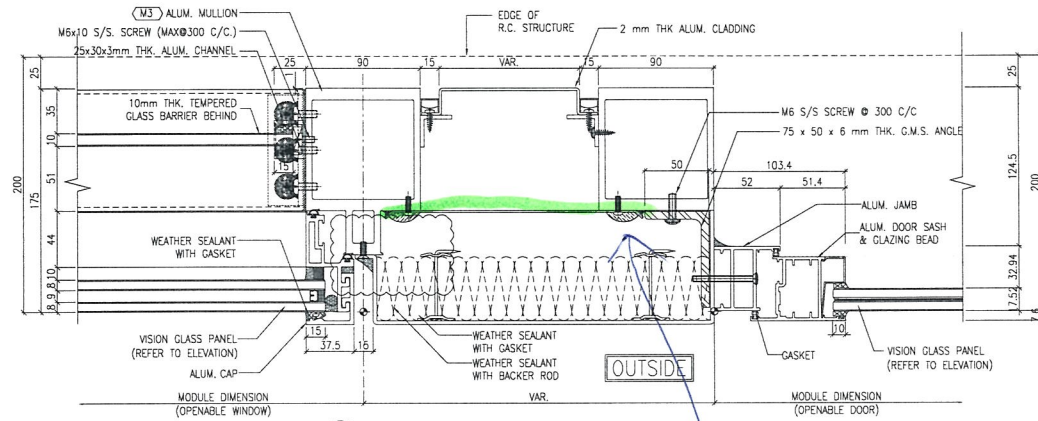
PROJECT :
URA KWUN TONG TOWN CENTRE
REDEVELOPMENT (AREA 2 & 3) AT
NKIL 6514, KWUN TONG, KWLOON

TITLE :
TYPICAL MULLION DETAIL
FOR CURTAIN WALL

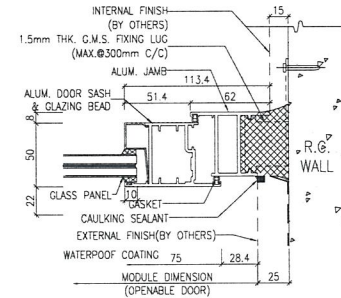
DATE : 13-JUL-18 SCALE : 1:2 (A1)

DRAWN BY : ASING CHECKED BY : -

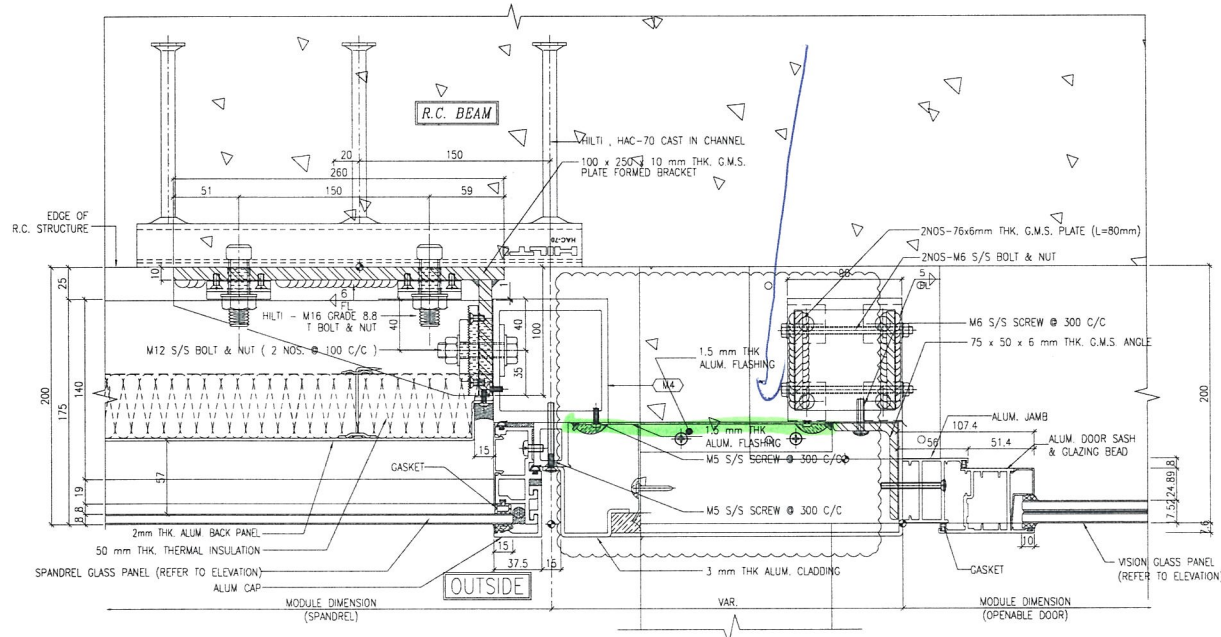
英特鋁質有限公司
MIDI ALUMINIUM FABRICATOR LTD
Units 6-8, Sunray Industrial Centre, 1/F
610 Ono Kwong Road, Kwun Tong
Tel: 23489211-4 Fax: (852) 2727666
DWG NO J837-CW-5005 REV : B



1 TYPICAL MULLION DETAIL
5006 CURTAIN WALL



2 TYPICAL MULLION DETAIL
5006 CURTAIN WALL



3 TYPICAL MULLION DETAIL
5006 CURTAIN WALL

指

B.D. REF :

CLIENT :
信和置業有限公司
Sino Land Company Limited

ARCHITECT :
WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

MAIN CONTRACTOR :
CR Construction Company Limited

STRUCTURAL ENGINEER :
AECOM

FAÇADE CONSULTANT:
AECOM

NOTE :
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2. ALL ELEVATIONS ARE VIEWED FROM OUTSIDE.
3. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE FABRICATION.

LEGEND :
X1 --- DETAIL MARK NO.
X001 --- REFER SHEET NO.

1. F.F.L. --- FINISHED FLOOR LEVEL
2. S.F.L. --- STRUCTURAL FLOOR LEVEL
3. (R) --- REVERSED DETAIL

B	24/11/2018	GENERAL	REVISED
A	10/9/2018	GENERAL	REVISED
NO.	DATE	REVISED	BY

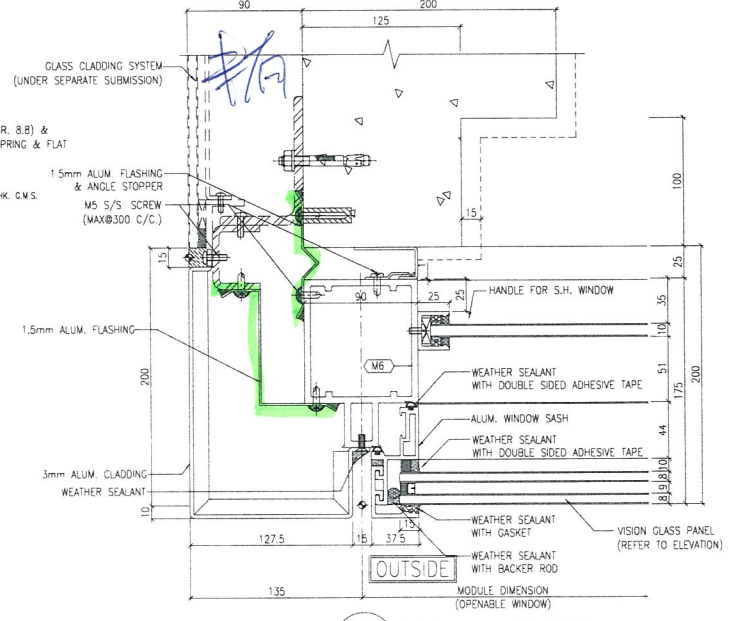
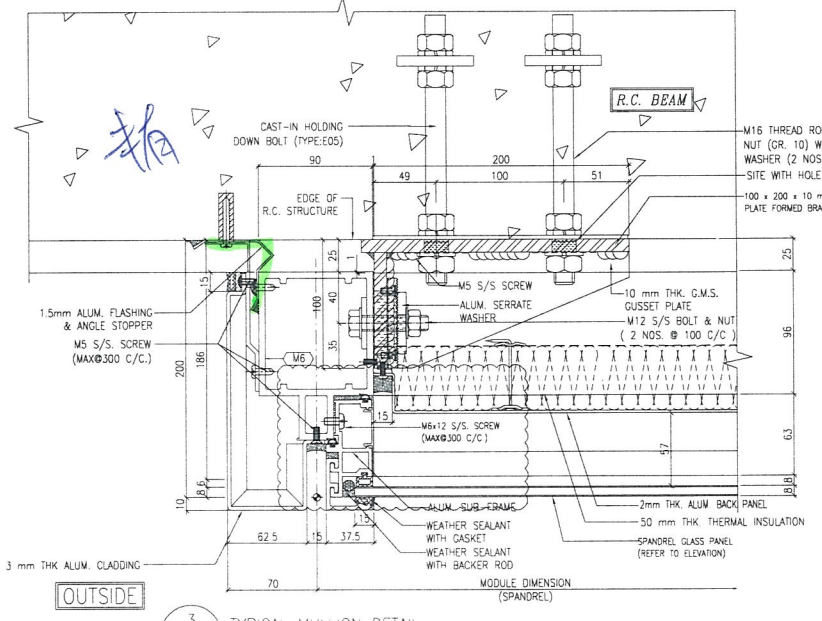
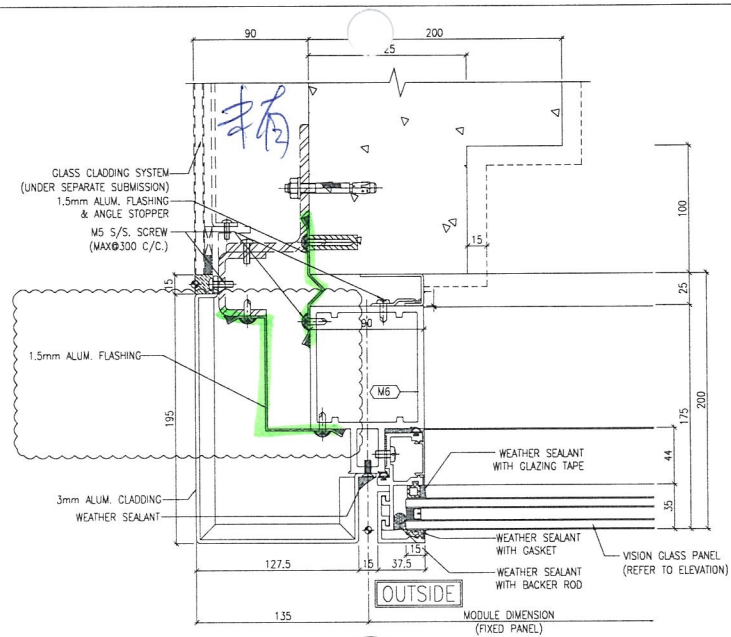
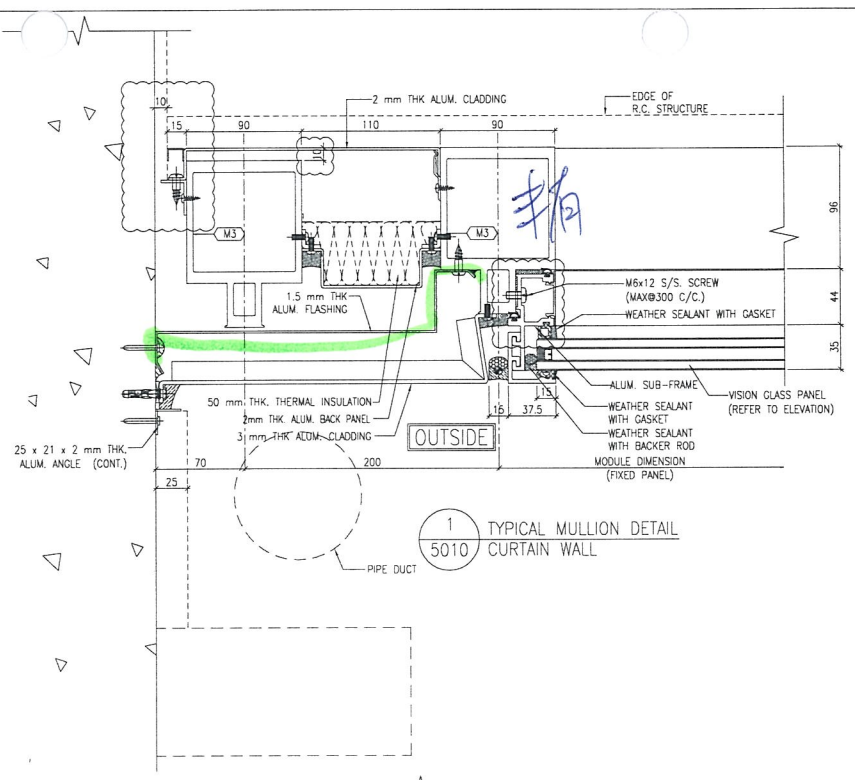
JOB NO. : J-B37

PROJECT :
URA KWUN TONG TOWN CENTRE
REDEVELOPMENT (AREA 2 & 3) AT
NKIL 6514, KWUN TONG, KWLOON

TITLE :
TYPICAL MULLION DETAIL
FOR CURTAIN WALL

DATE : 13-JUL-18 SCALE : 1:2 (A1)
DRAWN BY : ASING CHECKED BY : -

MIDI ALUMINIUM FABRICATOR LTD.
Units 6-8, Sunray Industrial Centre, 1/F
610 Cho Kwong Road, Kowloon
Tel: 23499211-4 Fax: (852) 27727866
DWG NO J837-CW-5006 REV B



B.D. REF :

CLIENT :
 信和置業有限公司
 Sino Land Company Limited

ARCHITECT :
 WONG TUNG & PARTNERS LIMITED
 ARCHITECTS & PLANNERS

MAIN CONTRACTOR :
 CR Construction Company Limited

STRUCTURAL ENGINEER :
 AECOM

FAÇADE CONSULTANT :
 AECOM

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LEGEND :
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 (X001) -- REFER SHEET NO.
 1 F.F.L -- FINISHED FLOOR LEVEL
 2 S.F.L -- STRUCTURAL FLOOR LEVEL
 3 (R) -- REVERSED DETAIL

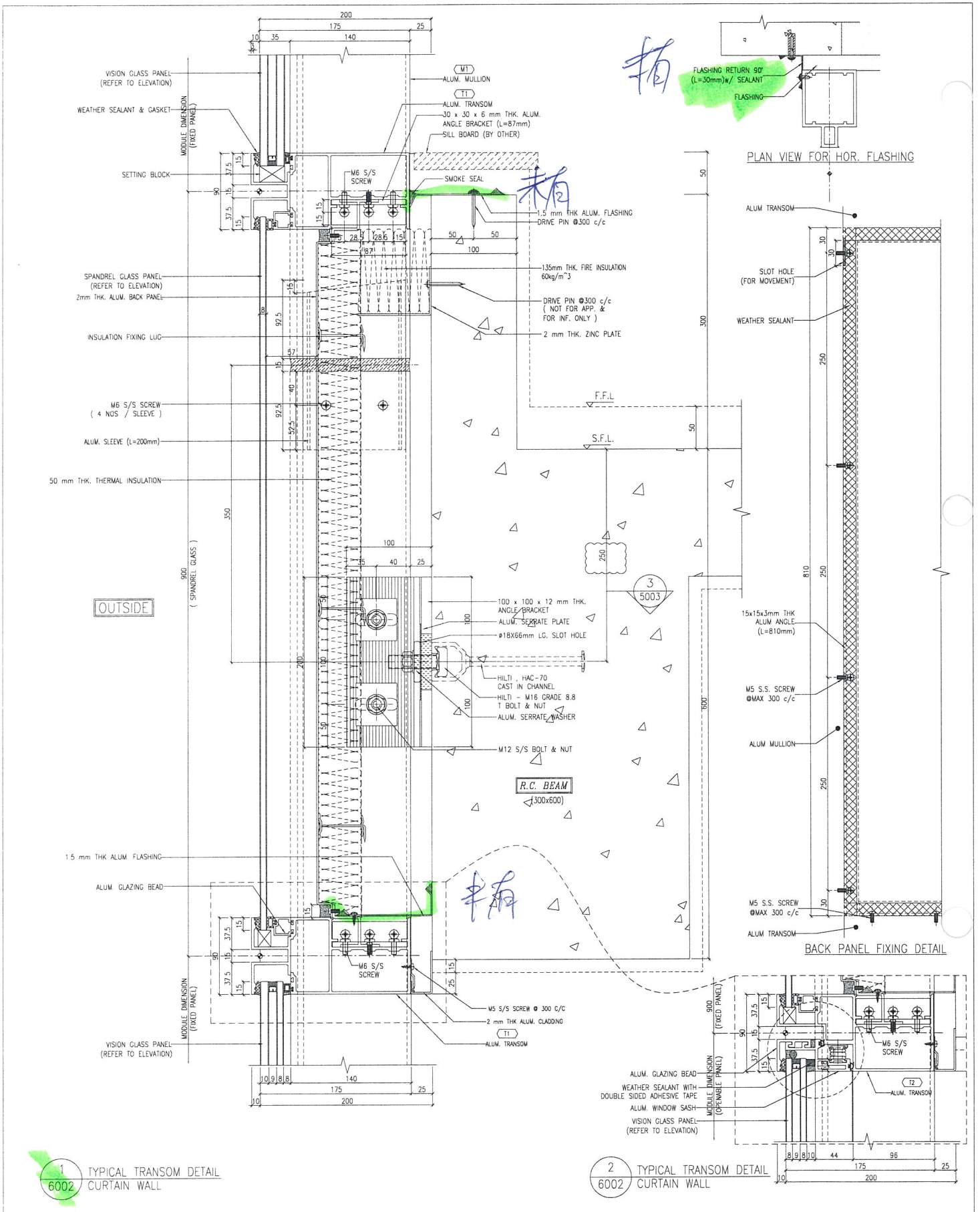
NO.	DATE	REVISION	BY
A	24/11/2018	GENERAL REVISED	

JOB NO. : J-B37
 PROJECT :
 URA KWUN TONG TOWN CENTRE
 REDEVELOPMENT (AREA 2 & 3) AT
 NKIL 6514, KWUN TONG, KWLOON

TITLE :
 TYPICAL MULLION DETAIL
 FOR CURTAIN WALL

DATE : 13-JUL-18 SCALE : 1:2 (A1)
 DRAWN BY : ASING CHECKED BY : -

美特鋁質有限公司
 MIDI ALUMINUM FABRICATOR LTD
 Units 6-8, Sunray Industrial Centre, 1/F
 610 Cho Kwo Ling Road, Kwloon
 Tel: 23469211-4 Fax: (852)27727656
 DWG NO. : JB37-CW-5010 REV : A

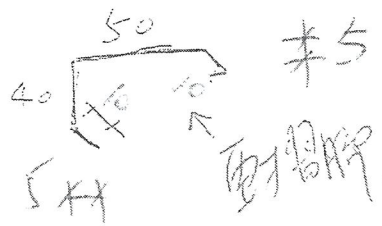


1 6002 TYPICAL TRANSOM DETAIL CURTAIN WALL

2 6002 TYPICAL TRANSOM DETAIL CURTAIN WALL

6002 1 TYPICAL TRANSOM DETAIL CURTAIN WALL	DATE: 13-JUL-18 SCALE: 1:2 (A1) DRAWN BY: ASING CHECKED BY: -	PROJECT: URA KWUN TONG TOWN CENTRE REDEVELOPMENT (AREA 2 & 3) AT NPL 6514, KWUN TONG, KWLOON	JOB NO.: J-837	1. F.F.L. - FINISHED FLOOR LEVEL 2. S.F.L. - STRUCTURAL FLOOR LEVEL 3. - - - - - REFERRED DETAIL	NOTE: 1. ALL DIMENSIONS ARE IN mm 2. ALL ELEVATIONS ARE VIEWED FROM OUTSIDE 3. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE FABRICATION.	PROJECT CONSULTANT: AECOM	STRUCTURAL ENGINEER: AECOM	MAIN CONTRACTOR: CR Construction Company Limited	ARCHITECT: WTF ARCHITECTS & PLANNERS	CLIENT: 怡和置業有限公司 Sino Land Company Limited	B.D. REF.:
	TITLE: TYPICAL TRANSOM DETAIL FOR CURTAIN WALL	URA KWUN TONG TOWN CENTRE REDEVELOPMENT (AREA 2 & 3) AT NPL 6514, KWUN TONG, KWLOON	JOB NO.: J-837	1. F.F.L. - FINISHED FLOOR LEVEL 2. S.F.L. - STRUCTURAL FLOOR LEVEL 3. - - - - - REFERRED DETAIL	NOTE: 1. ALL DIMENSIONS ARE IN mm 2. ALL ELEVATIONS ARE VIEWED FROM OUTSIDE 3. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE FABRICATION.	PROJECT CONSULTANT: AECOM	STRUCTURAL ENGINEER: AECOM	MAIN CONTRACTOR: CR Construction Company Limited	ARCHITECT: WTF ARCHITECTS & PLANNERS	CLIENT: 怡和置業有限公司 Sino Land Company Limited	B.D. REF.:

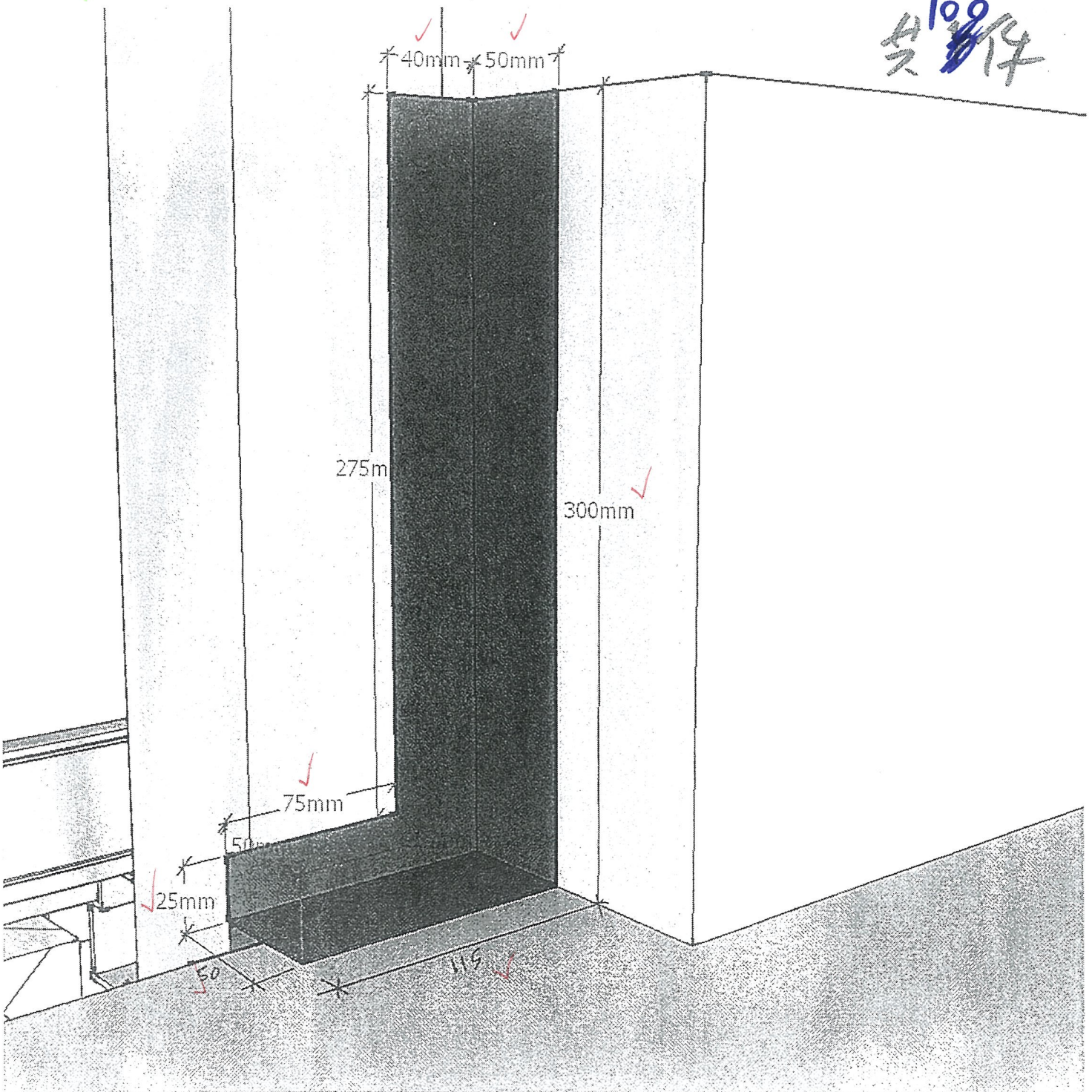
A



右: 30

右: 30

共 100 件



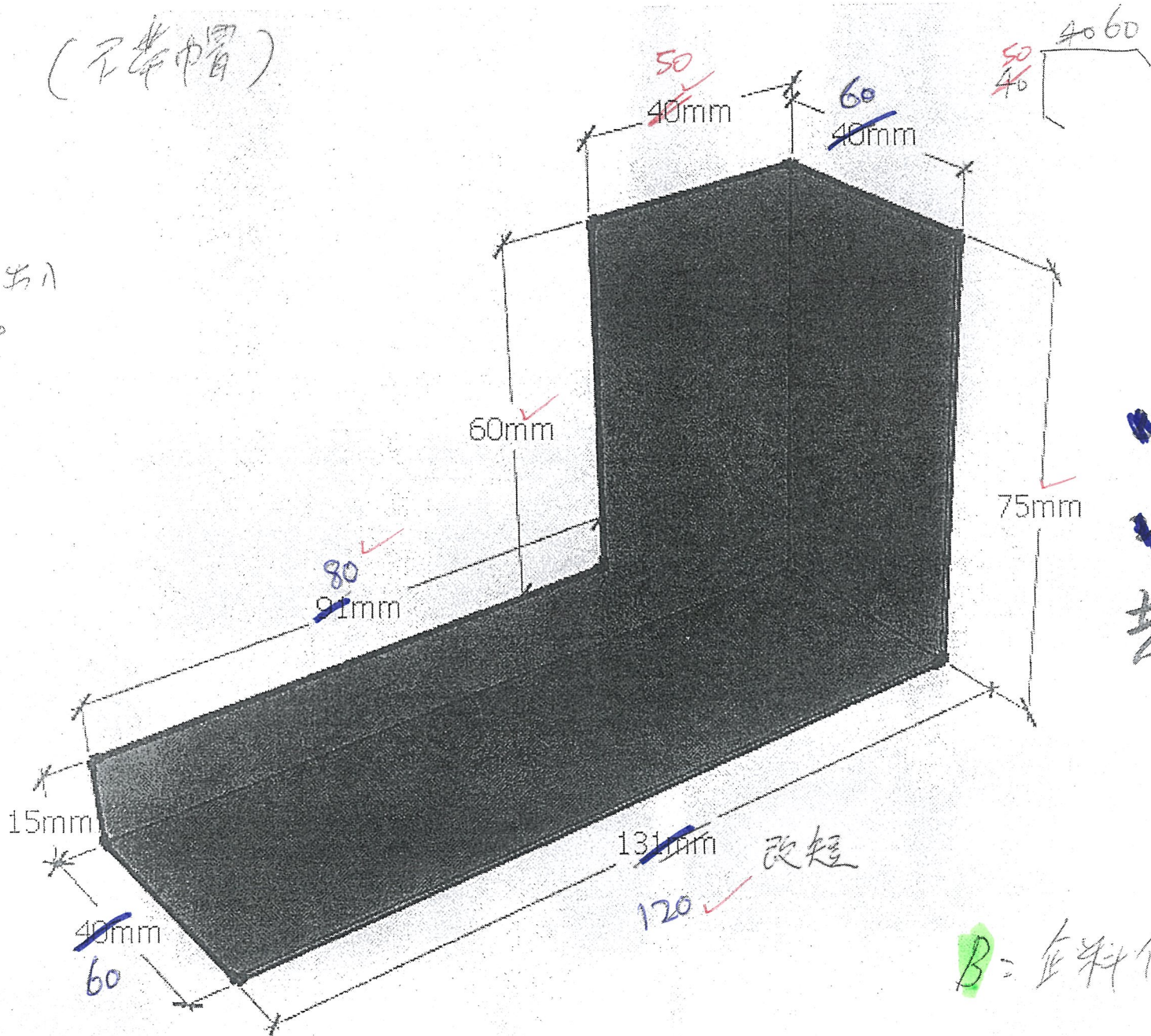
具仔位量在斗背

①

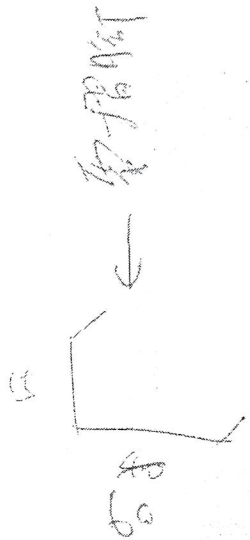
(B)

(不带帽)

除 打钉 出入
 $C = 25, 15 + 20$



左 = 50
 右 = 50
 共 100 件

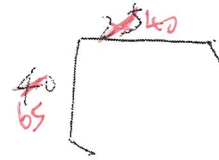
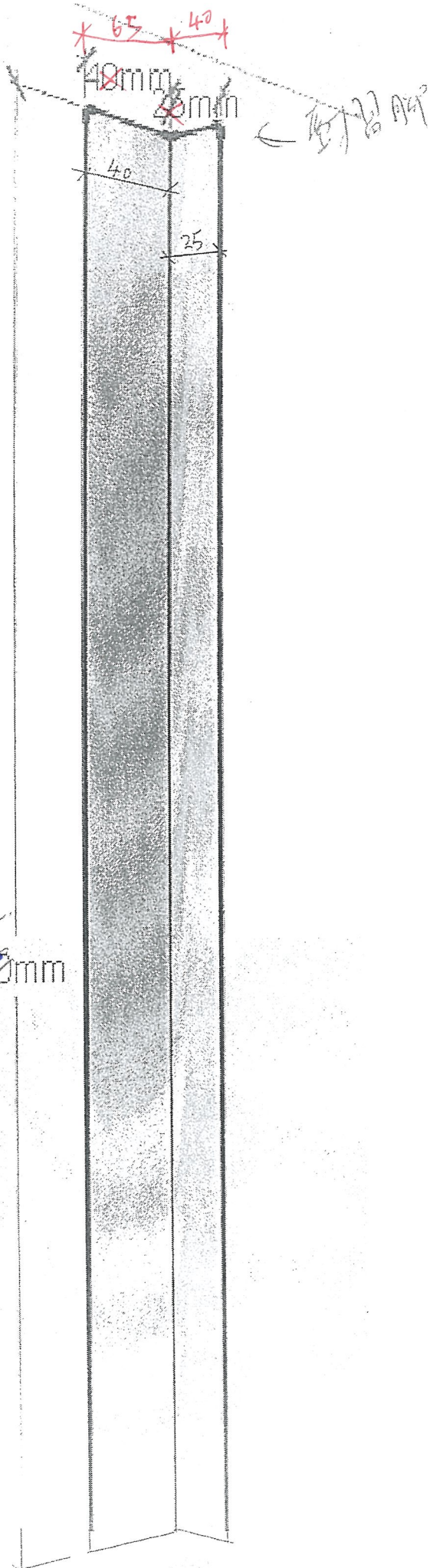


改短

B = 金属材料 磁器台

(2)

①



左右 = 50

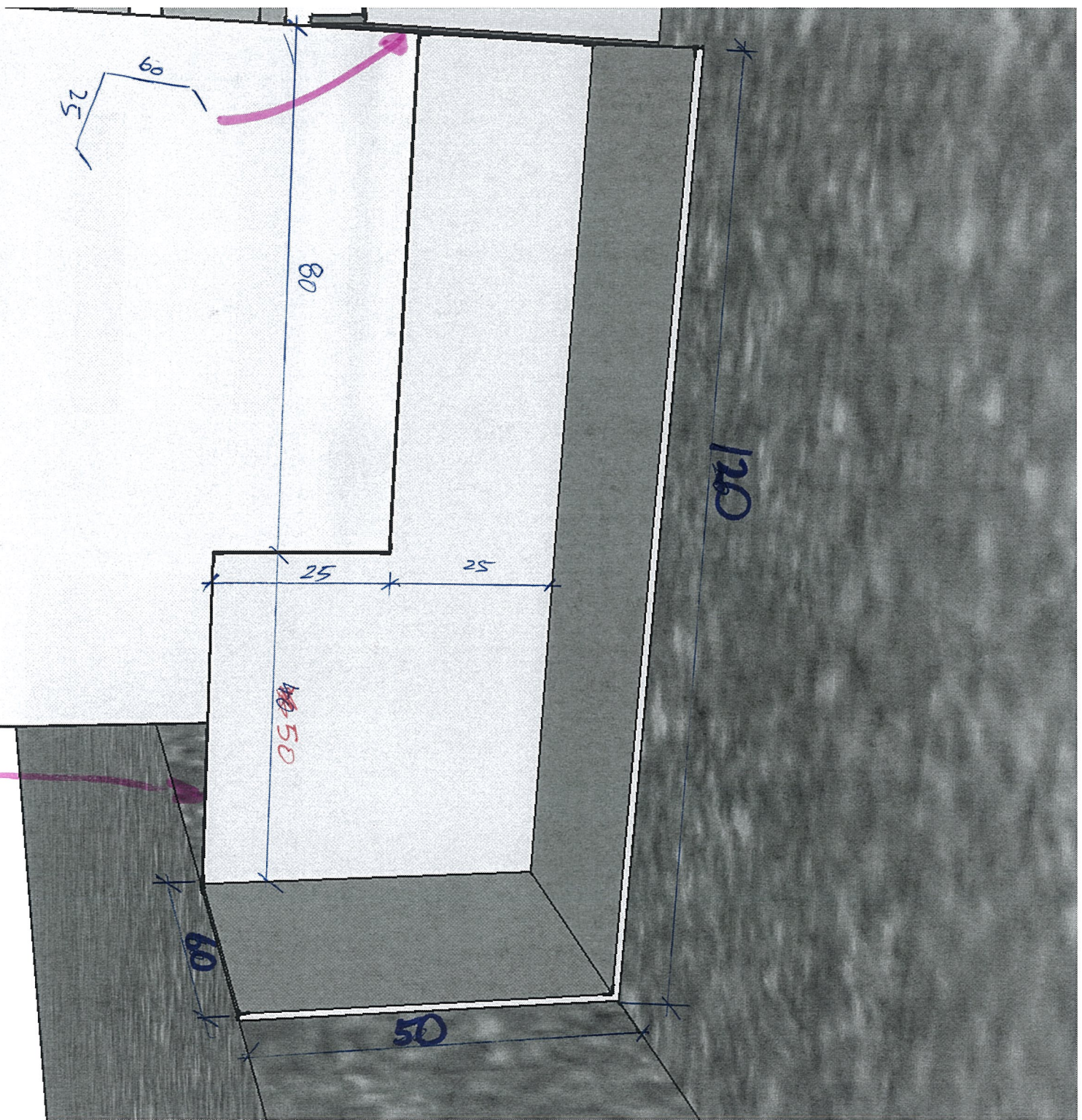
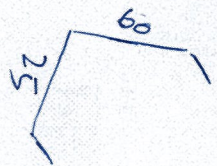
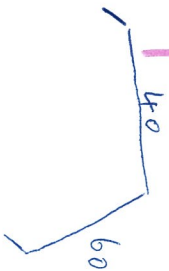
左右 = 250

共 100 件

② 斜側面修磨

(斜面修) ③

左: 50件
右: 50件
合計 100件



①

窗框示意图

企料

基仔

窗棂

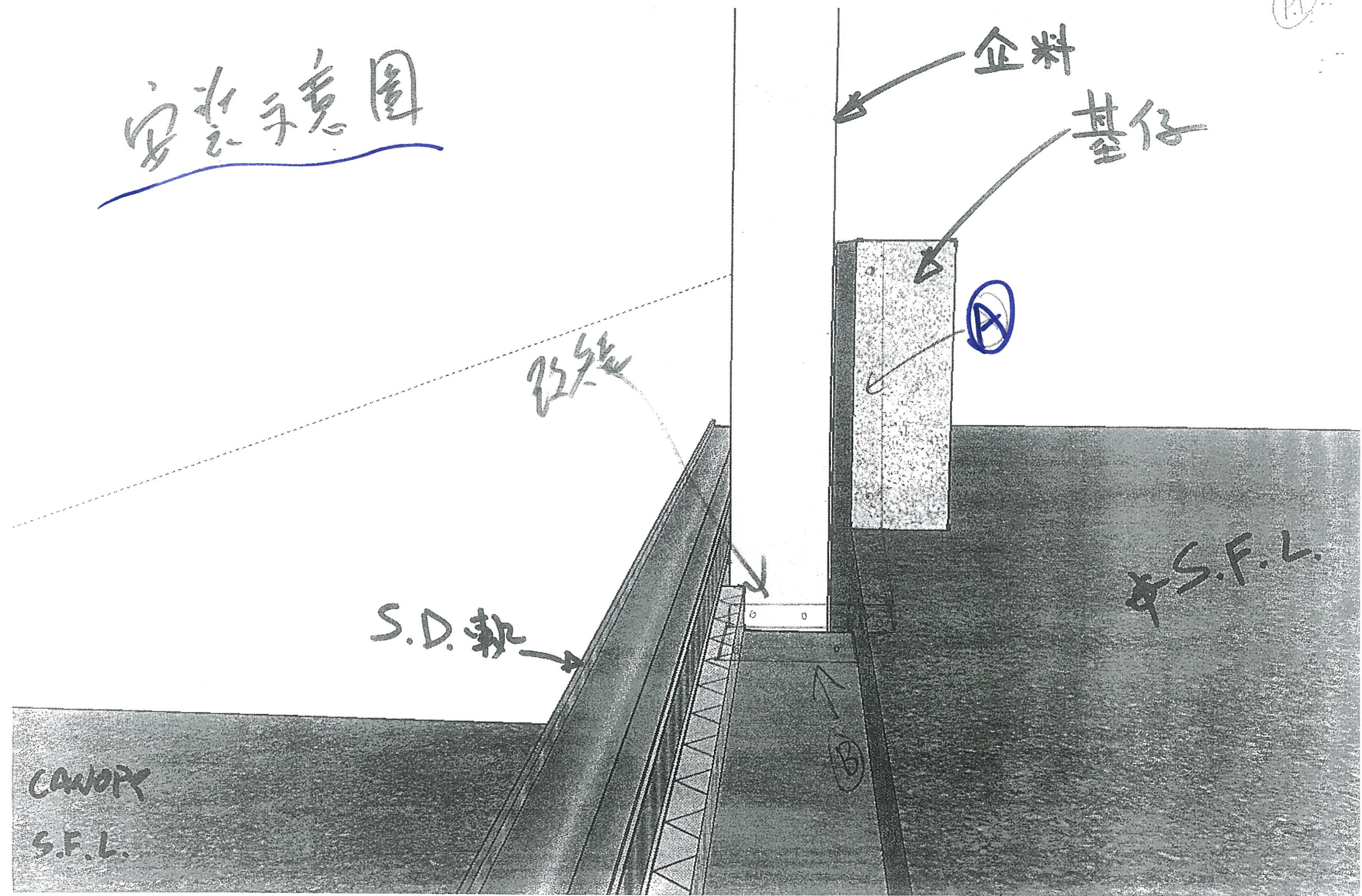
S.D. 軌

S.F.L.

CANOPY
S.F.L.

(A)

(B)



基仔

企料

S.F.L

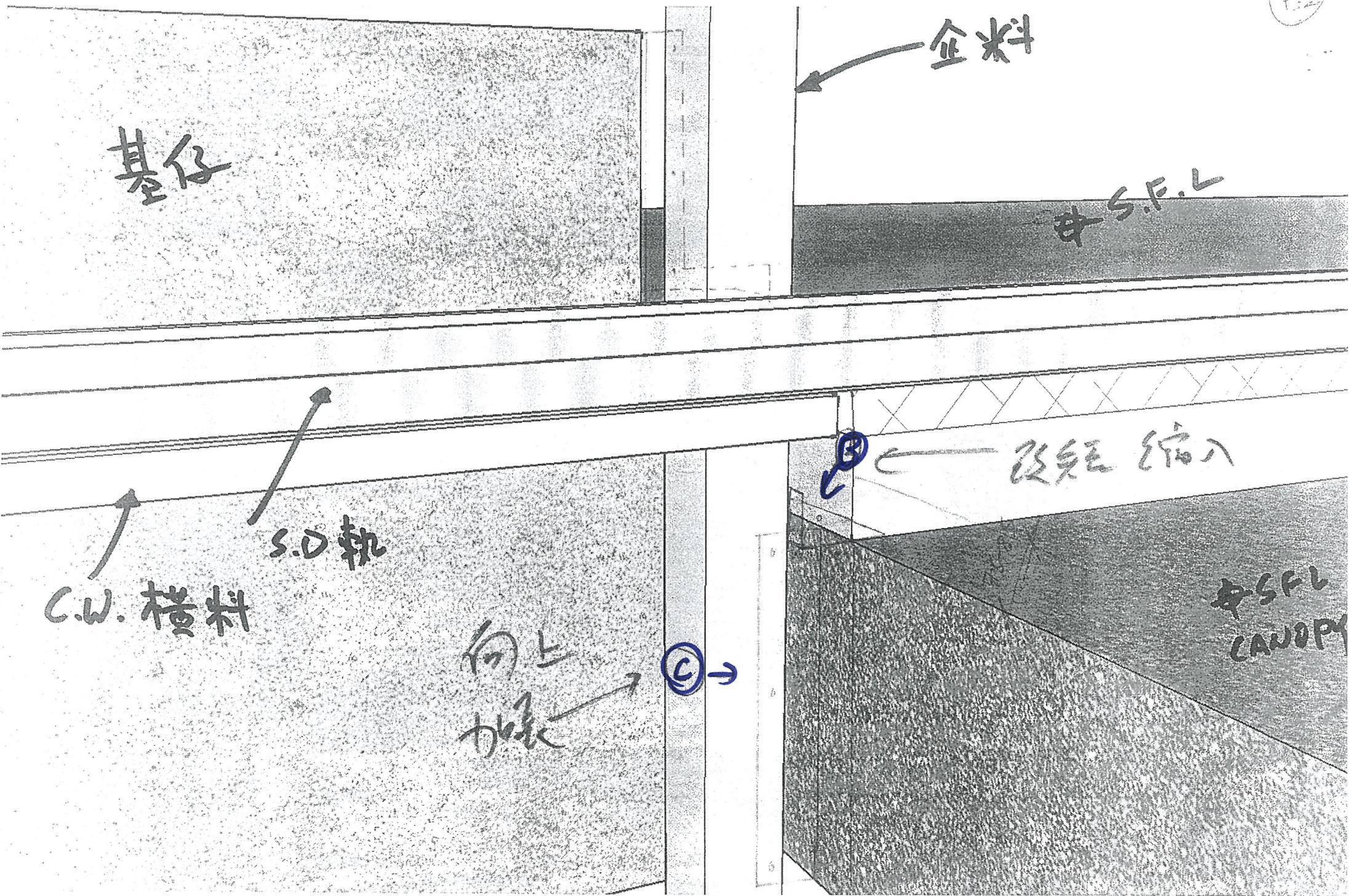
C.W. 橫料

S.O 軌

向上
加長

改短縮入

S.F.L
CANOPY



CW 橫料

S.D. 軌



向內
縮入
功能

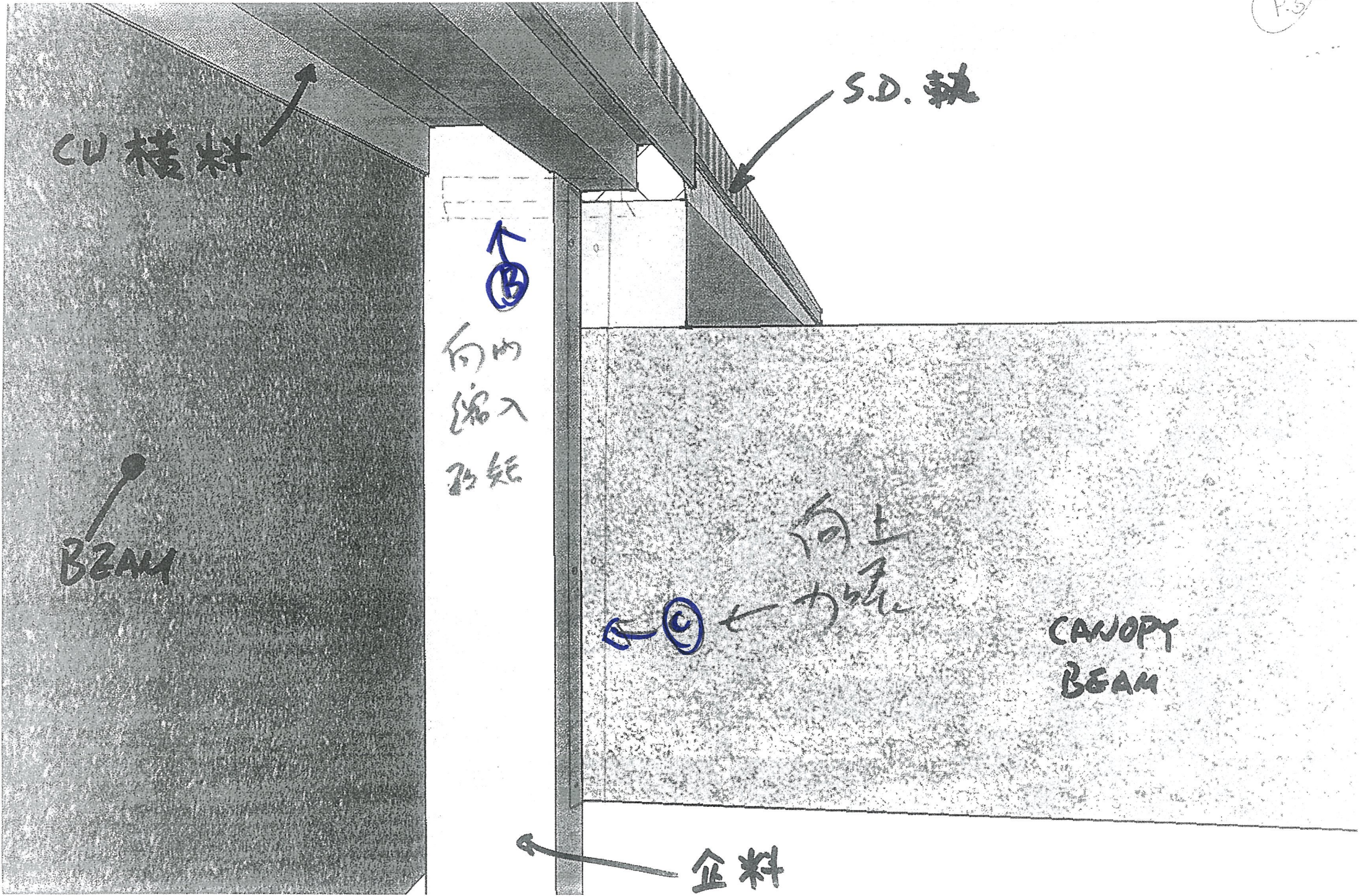
BZAM

向上
力矩



CANOPY
BEAM

企料



基仔

企料

✱ SFL

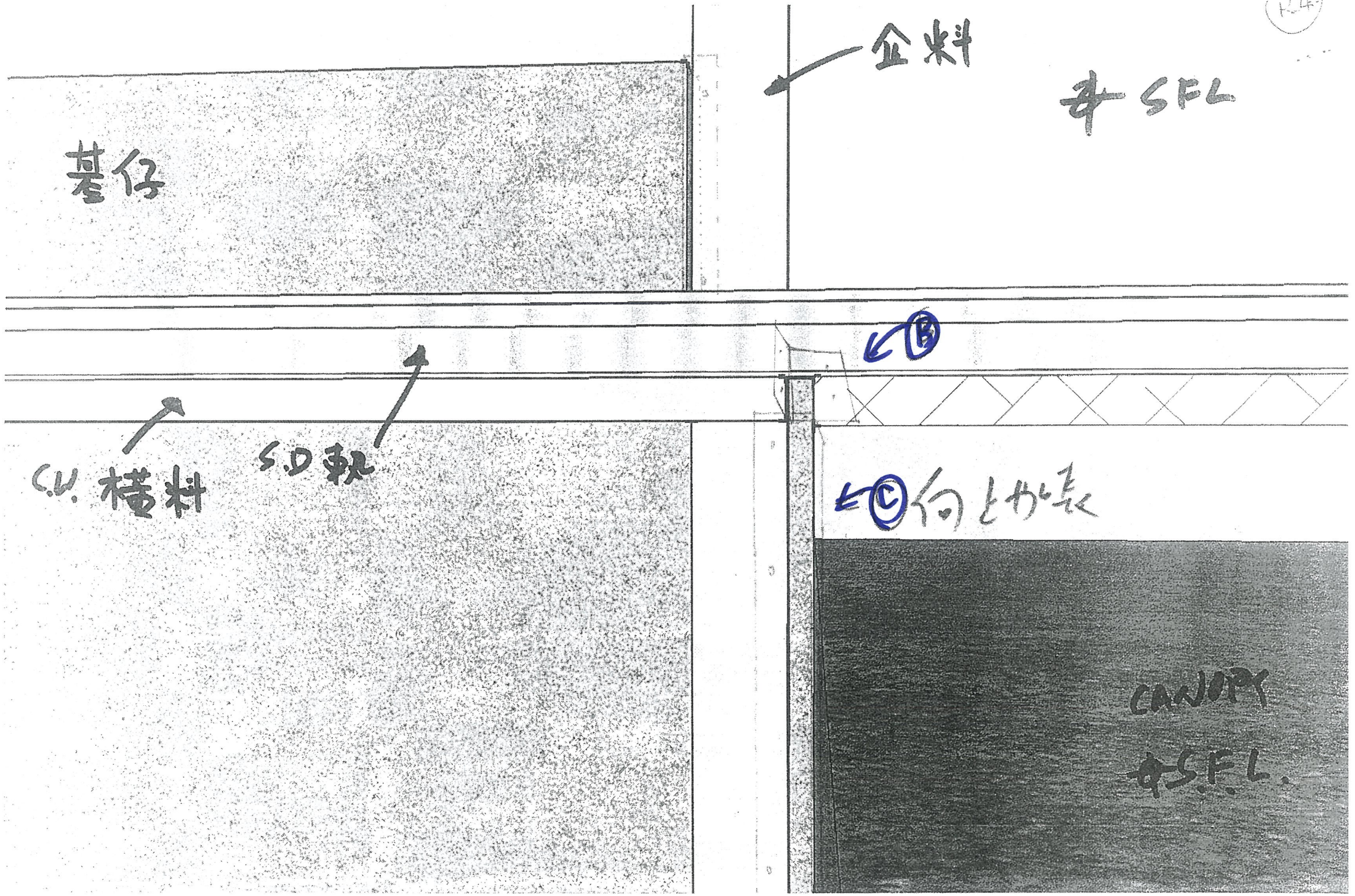
C.V. 橫料

S.D 軌

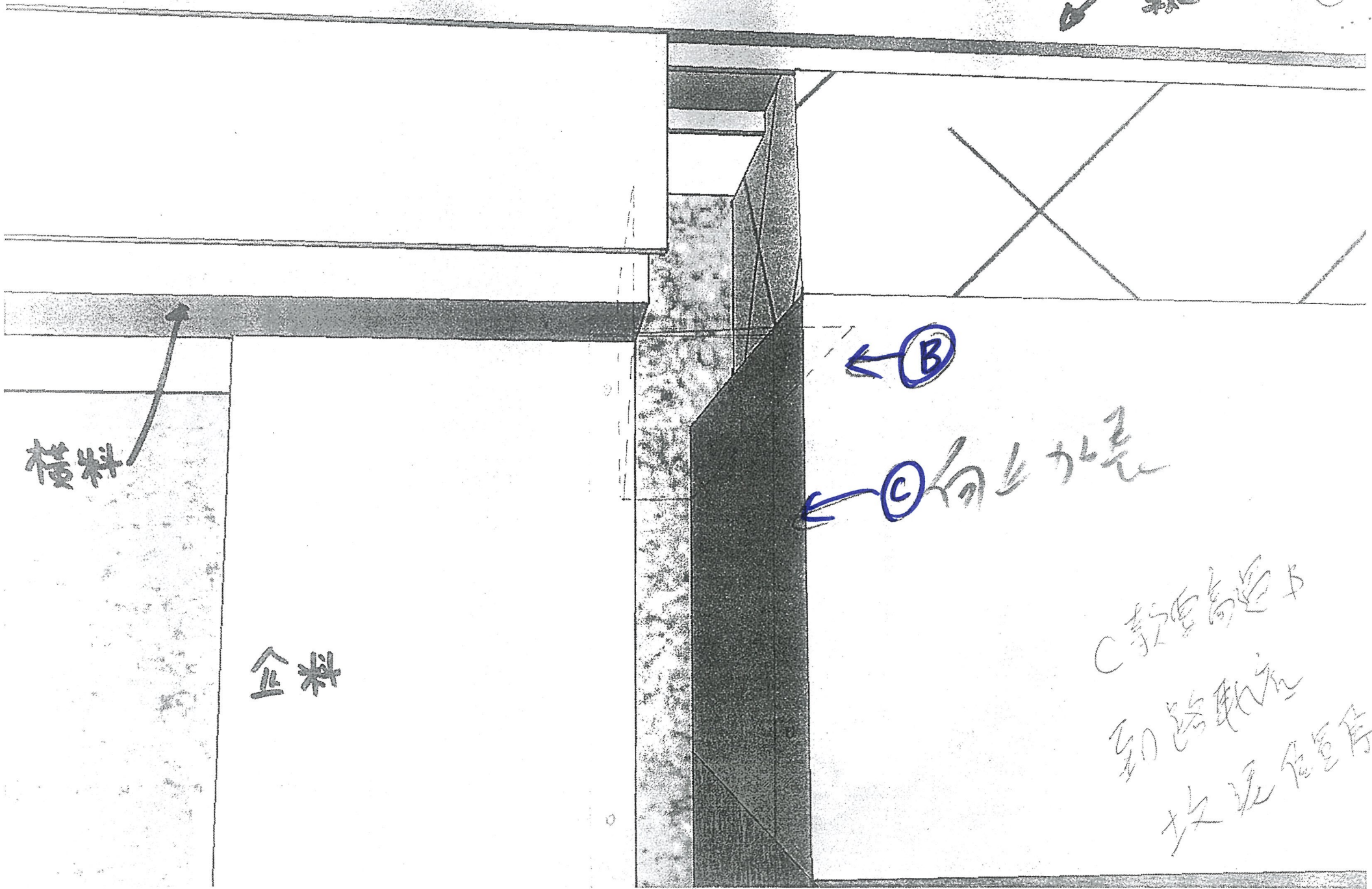
← ⊙ 向 ↑ 加長

CANOPY

✱ S.F.L.



軟



横料

企料

← (B)

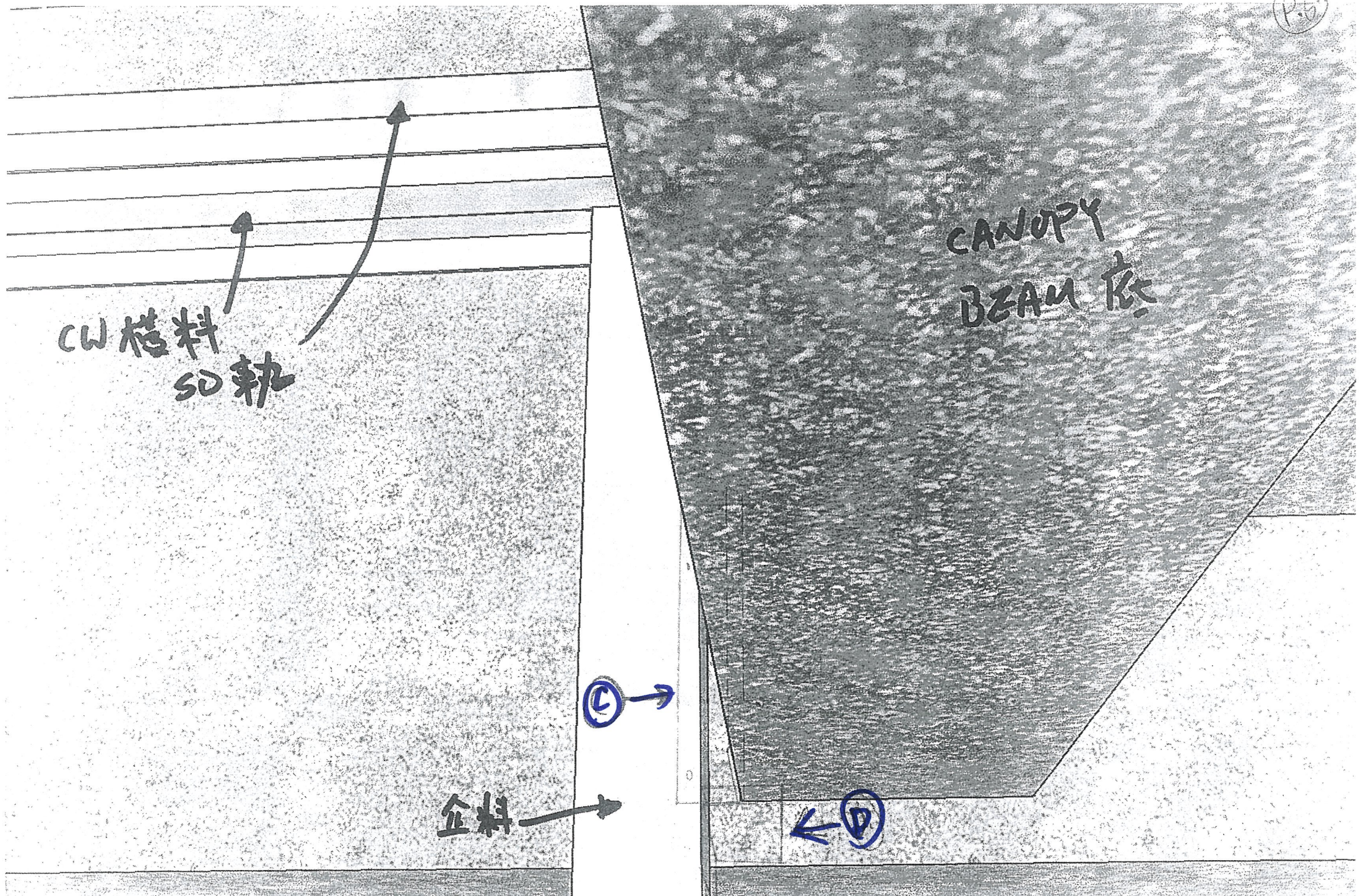
← (C) 向上加長

C 軟管高過 B
 到路軌流
 坎泥在管內

CW 橋料
SD 軌

CANOPY
BEAM 梁

企料



Yp 1/16 (A)

**SMOKE CONTROL TEST IN ACCORDANCE WITH BS EN 12101: Part 1:
2005 + A1: 2006 Cl. 4.4.2**


On a Static Smoke Barrier used for Curtain Wall System

Test Report No.: R16M04-1A
Sample Identification: Q16L04-1
Issue Date: 15 May, 2017

Test Sponsor

Midi Aluminium Fabricator Limited
Unit 5, 5/F., Sunray Industrial Centre,
610 Chak Kwo Ling Road, Kowloon

APPROVED SIGNATORY: _____

[Signature]


DATE: 15 MAY 2017

Ir. Dr. YUEN Sai-wing, MHKIE (FIRE)

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1 SUMMARY

Smoke control test conducted in accordance with BS EN 12101: Part 1: 2005 + A1: 2006, Cl. 4.4.2 on a static smoke barrier used for curtain wall system

A specimen of static smoke barrier system used for curtain wall system had been subjected to the tests in accordance with BS EN 12101: Part 1: 2005 + A1: 2006 with the test method referred to BS EN 1634-3: 2004, in order to determine the smoke leakage from one side to the other under the ambient and medium temperature at pressure differences of 10 Pa, 25 Pa and 50 Pa. As requested by the test sponsor, the specimen was mounted within concrete lined specimen holders with the curtain walling unit. The static barrier system was fitted to the specimen holder by the test sponsor. The fixing details were as shown in the test sponsor's drawings (see the appendix). The construction of the smoke barrier was specified and the leakage rates from one side of the static smoke barrier were assessed for evaluation only.

One specimen of static smoke barrier together with the curtain wall unit had been submitted by the test sponsor. The curtain wall unit had overall dimensions of 1,000 mm high by 3,000 mm long by 250 mm thick. The curtain wall unit was installed to the concrete lined specimen holders such that there was a 50 mm wide gap in between the concrete beam and the curtain wall unit. The 50 mm wide gap was covered by the 'MIDI smoke barrier system' which composed of two aluminium covers of sizes 2,050 mm long by 140 mm wide by 1.5 mm thick and 1,050 mm long by 140 mm wide by 1.5 mm thick (see photo 5 in the report). The effective area of the smoke seals is 3,000 mm wide by 140 mm wide. The aluminium covers were fixed to the concrete slab by #9 screws at 500 mm c/c. The aluminium covers were overlapped by a length of 50 mm and the perimeter including the joints between the covers were fully sealed with 'DC791' weather sealant.

The smoke leakage rates of the doorsets were summarized as below:

Test	Temp	Leakage rate Q_{spec} (m^3/h) at pressure difference of			Leakage rate Q_l per square meter ($m^3/h/m^2$) at pressure difference of		
		10 Pa	25 Pa	50 Pa	10 Pa	25 Pa	50 Pa
1	Ambient	0.56	0.56	0.56	1.33	1.33	1.33
2	Medium	2.78	4.38	2.74	6.62	10.43	6.52

2 INTRODUCTION

The specimen was tested in accordance with BS EN 12101: Part 1: 2005 + A1: 2006 with the test method referred to BS EN 1634-3: 2004, 'Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Smoke control test for door and shutter assemblies'. Both ambient and medium temperature leakage rates were considered in the tests.

The specimen was submitted by the test sponsor, and was mounted and constructed by the test sponsor. The test was led by Ms. Ivy Zou of Research Engineering Development Façade Consultants Limited (RED).

3 INFORMATION

3.1. Testing laboratory

Research Engineering Development Façade Consultants Limited (RED)
No. 111, Jiaoxin Road, Lanhe Town, Nansha District, Guangzhou, China

3.2. Test date

19th April, 2017

3.3. Equipment

A test chamber with an open front of size 3 m by 3 m to mount the test construction and provide a sealed enclosure to generate the necessary heating and pressure condition.

Nine (9) thermocouples to monitor the temperature of the test chamber, which were kept at 100 mm from the face of the specimen (see Figure 1).

A flowmeter to measure the volume flow rate supplied to the apparatus to compensate for the total leakage.

A micro-manometer provided to monitor the furnace pressure.

Displacement transducers provided to measure the deflection of the doorset.

3.4. Test environment

The temperature around the test area during the test was in the range of 29.2 °C – 29.6 °C.

The chamber was controlled so that the mean test chamber temperature at medium temperature test complied with the requirement of Clause 10.2.2.2 of BS EN 1634-3: 2004. The temperatures recorded are shown graphically in Figure 3.

Summaries of the observations made on the general behaviour of the specimen are given in the appendix of this report.

4 CONDITIONING

The specimen was conditioned to equilibrium as specified in BS EN 1363-1.

The specimen's storage, construction, and test preparation took place in the test laboratory over a total, combined time of 14 days. Throughout this period of time, both of the temperature and humidity of the laboratory were measured and recorded as being within a range of 29 °C to 31 °C and 52 % to 90 % respectively.

5 TEST SPECIMEN

5.1. Selection of specimen

The specimen was submitted to the test location by the test sponsor. RED did not involve in the selection of the specimens.

5.2. Verification of specimen

The specifications of the door assembly provided by the test sponsor were as shown in Appendix D of this report. Items that had been verified by RED were clearly identified.

5.3. Supporting construction

The supporting construction was 300 mm thick concrete lined beam with a structural opening of 3,000 mm wide by 1,000 mm high.

5.4. Specimen construction

One specimen of static smoke barrier together with the curtain wall unit had been submitted by the test sponsor. The curtain wall unit had overall dimensions of 1,000 mm high by 3,000 mm long by 250 mm thick. The curtain wall unit was installed to the concrete lined specimen holders such that there was a 50 mm wide gap in between the concrete beam and the curtain wall unit. The 50 mm wide gap was covered by the 'MIDI smoke barrier system' which composed of two aluminium covers of sizes 2,050 mm long by 140 mm wide by 1.5 mm thick and 1,050 mm long by 140 mm wide by 1.5 mm thick (see photo 5 in the report). The effective area of the smoke seals is 3,000 mm wide by 140 mm wide. The aluminium covers were fixed to the concrete slab by #9 screws at 500 mm c/c. The aluminium covers were overlapped by a length of 50 mm and the perimeter including the joints between the covers were fully sealed with 'DC791' weather sealant.

6 TEST PROCEDURE

The tests were conducted in accordance with the procedures specified in Section 10 of BS EN 1634-3: 2004.

6.1. Pre-test procedure

No pre-test procedure is required for this test.

The leakage rate through the apparatus together with the associated/supporting construction at 50 Pa and ambient temperature was measured to be lower than 10 m³/hr.

6.2. Air Leakage test

The ambient temperature of the test area during the test was measured. The furnace was monitored by nine (9) thermocouples so that the mean test chamber temperature complied with the requirements of Clause 10.2.2.2 of BS EN 1634-3: 2004.

6.3. Sequence of test

The tests were carried out in the following sequence:

- i) Specimen was mounted to the front face of the test chamber;
- ii) Determine the leakage rate through the test chamber and any support or associated construction at ambient temperature;
- iii) Determine the total leakage rate at ambient temperature;
- iv) Determine the total leakage rate at medium temperature; and
- v) Determine the leakage rate through the apparatus and any supporting or associated construction at medium temperature.

6.4. Test conditions

The temperature in the test chamber was controlled to be lower than 30 °C before the start of the test. The leakage rates through the test chamber and any supporting or associated construction and the total leakage rate at ambient temperature at pressure differences of 10 Pa, 25 Pa and 50 Pa were measured. The leakage rates were measured while the pressure difference was maintained for 2 minutes.

The temperature of the test chamber was raised to medium temperature (200 °C) in 30 ± 5 minutes at neutral pressure as stated in Clause 10.2.2.2 of BS EN 1634-3: 2004.

The leakage rates through the test chamber and any supporting or associated construction and the total leakage rate at medium temperature at pressures differences of 10 Pa, 25 Pa and 50 Pa were measured. The leakage rates were measured while the pressure difference was maintained for 2 minutes.

7 RESULTS

When tested in accordance with BS EN 1634-3: 2004 as referenced in BS EN 12101: Part 1: 2005 + A1: 2006, the measured leakage rates and the calculated linear leakage rates were summarized below. There was no failure of any components observed during the test. The observations during and after the test were summarized in Appendix B. The deflections of the specimen were summarized in Table 2 of Appendix C.

Specimen type: Static Smoke Barrier composed of aluminium cover plates and sealed with fire rated sealant

Effective size of smoke seal: 3,000 mm (long) by 140 mm (wide)

The smoke leakage rates of the doorsets were summarized as below:

Test	Temp	Leakage rate Q_{spec} (m^3/h) at pressure difference of			Leakage rate Q_l per square meter ($m^3/h/m^2$) at pressure difference of		
		10 Pa	25 Pa	50 Pa	10 Pa	25 Pa	50 Pa
1	Ambient	0.56	0.56	0.56	1.33	1.33	1.33
2	Medium	2.78	4.38	2.74	6.62	10.43	6.52

8 POST-TEST OBSERVATION

In general, there was no damage to the specimen after the test. After the test, the static smoke barrier remained intact in position without significant deterioration.

9 LIMITATIONS

This report details the method of construction, the test conditions and the results obtained when the specific element of construction described herein was tested following the procedure outlined in BS EN 1634-3: 2004. Any significant deviations with respect to size, construction details, loads, stresses, edges or end conditions other than those allowed under the field of application in the relevant test method is not covered by this report.

APPENDIX A – PHOTOS AND TEST RECORD

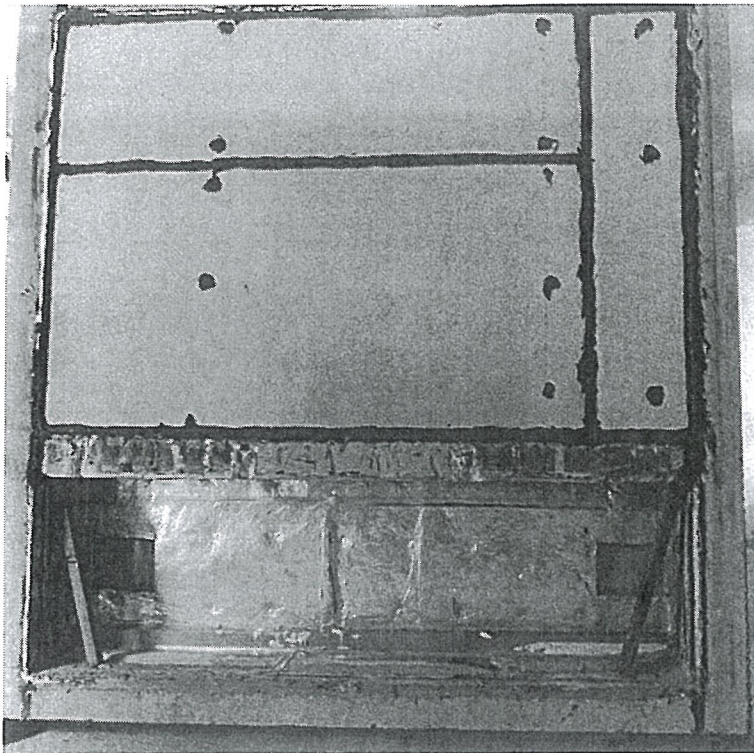


Photo 1: Exposed face of specimen before the test.

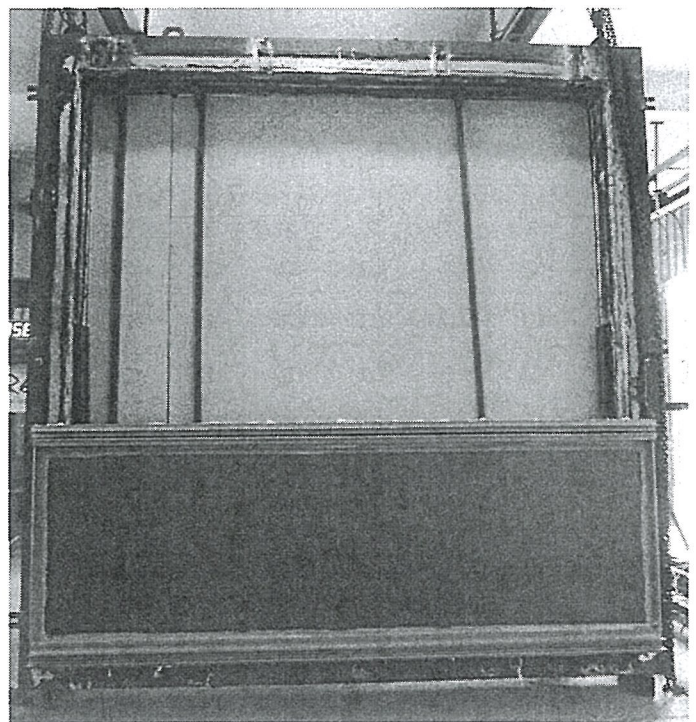
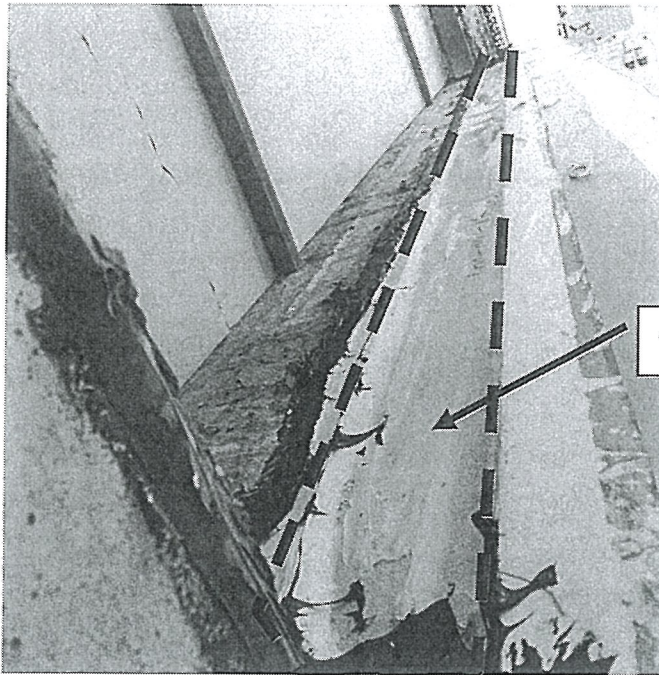


Photo 2: The exposed face of specimen after the test



The Smoke Barrier System

Photo 3: The static smoke barrier view from unexposed side

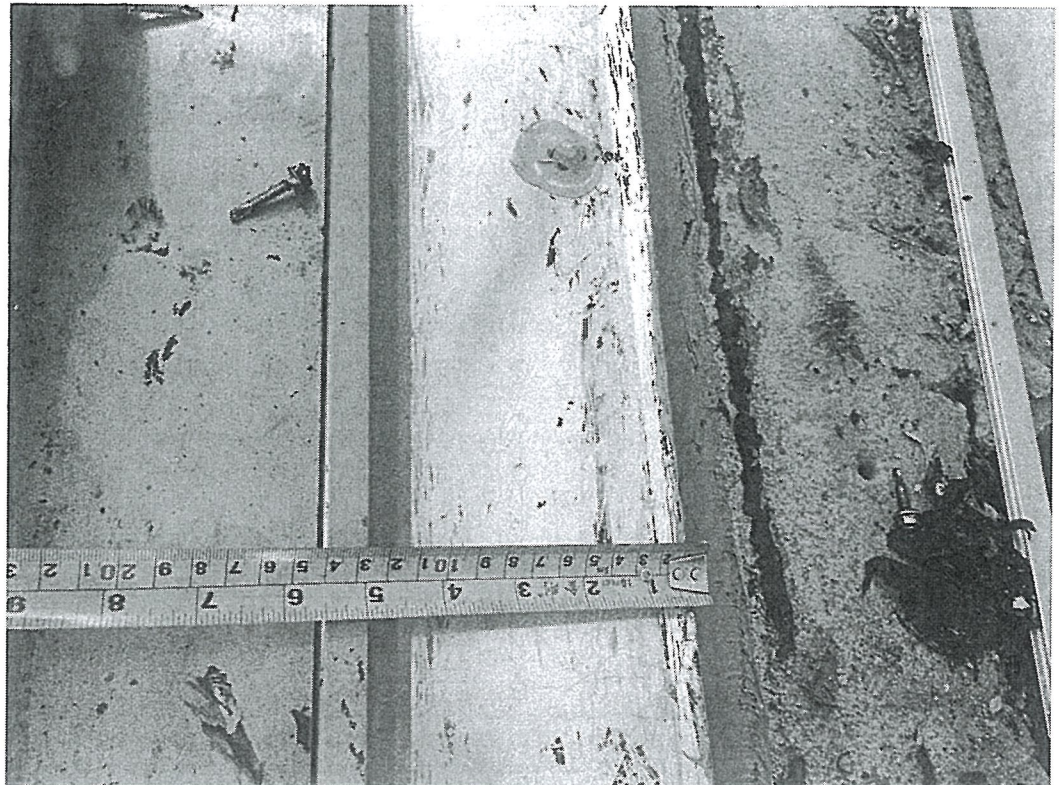
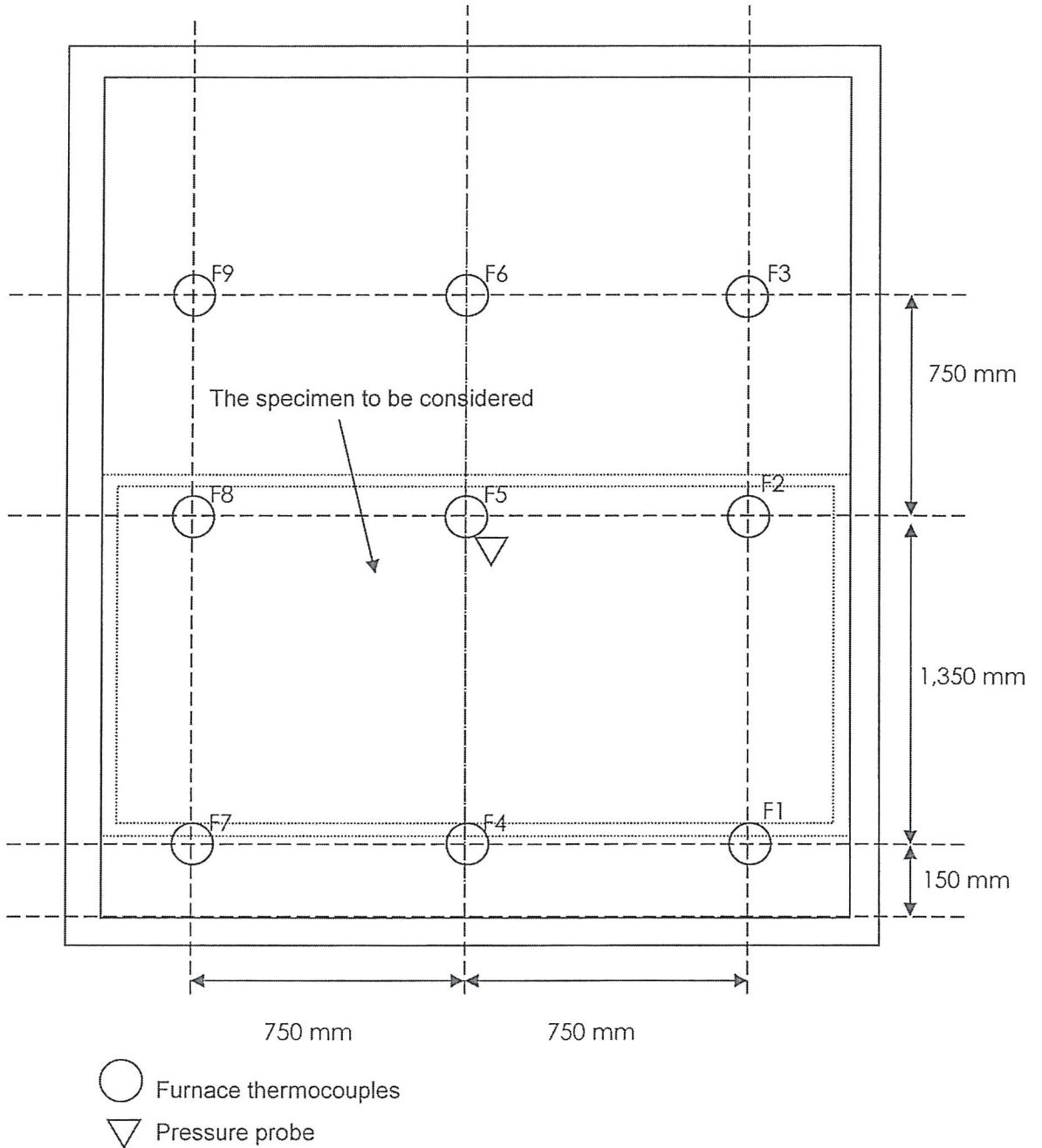
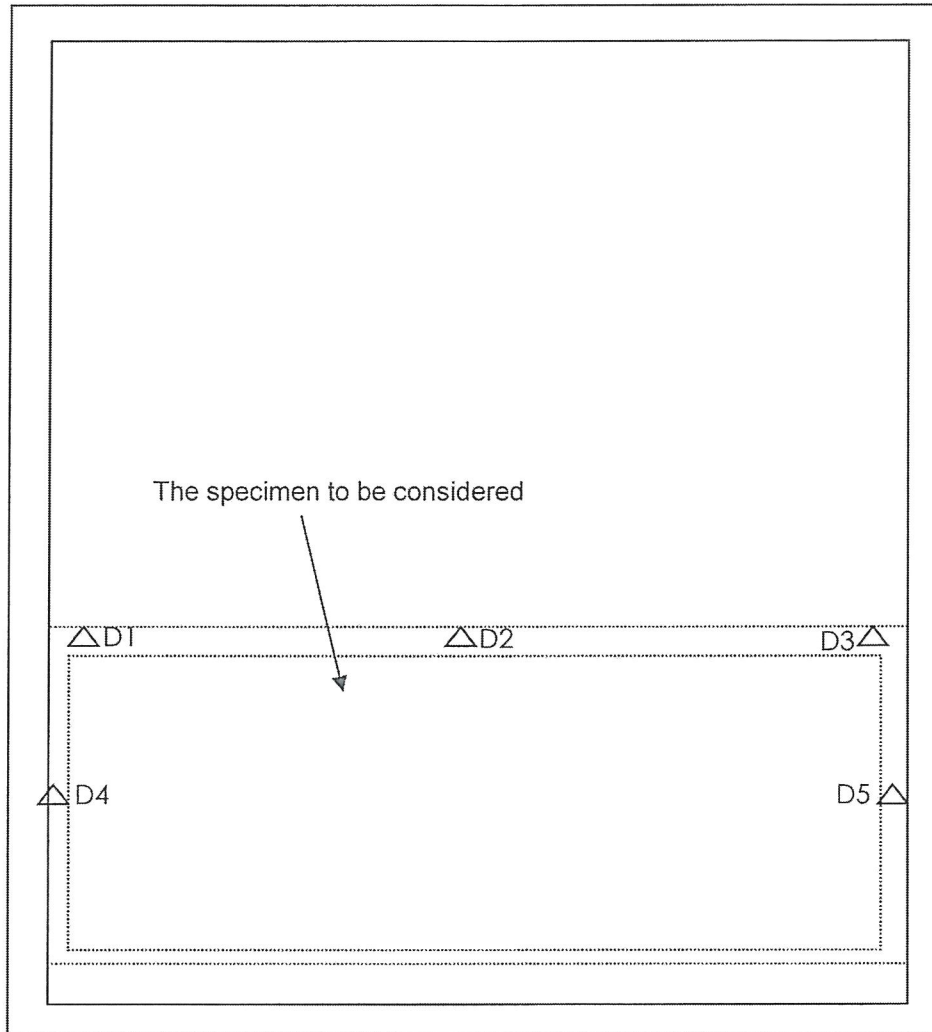


Photo 4: The static smoke barrier view from unexposed side



(The illustration not to scale)

Figure 1 – Locations and reference numbers of furnace thermocouples.



(The illustration not to scale)

Figure 2 – Locations and reference numbers of displacement measurement.

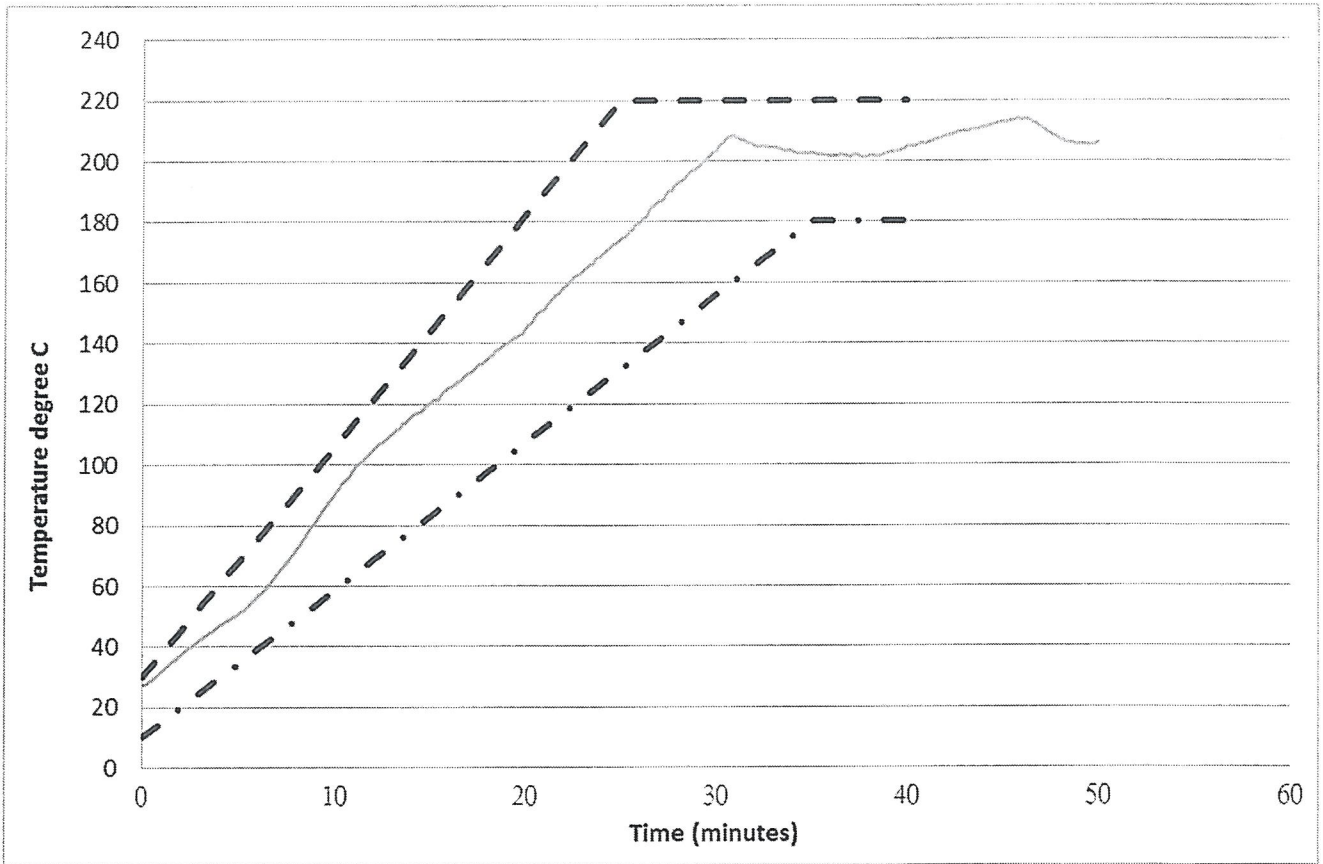


Figure 3 – Test chamber temperature (Medium Test)

Medium Temperature Test									
Time (mins)	Temperature (°C)								
	F1	F2	F3	F4	F5	F6	F7	F8	F9
0	28	26	27	27	28	28	28	28	28
5	49	48	52	50	52	53	51	52	54
10	86	85	90	88	92	93	90	94	98
15	116	113	120	116	122	125	119	125	128
20	141	137	145	140	144	148	143	149	154
25	170	169	178	171	171	174	171	179	185
30	185	201	212	199	206	210	193	207	218
35	185	200	209	200	206	209	194	205	215
40	186	203	211	202	208	213	196	208	217
45	193	212	220	208	216	221	203	216	226
50	191	204	212	203	209	213	195	209	217

Figure 4 – Temperature measured by individual thermocouples

APPENDIX B – OBSERVATION

Table 1 - Ambient and Medium Temperature Test

Time (min.sec)	Observation
Ambient Temperature Test	
00.00	The gap was sealed with pressure sensitive cover.
00.01	Measurement of leakage rates through apparatus and supporting construction started.
07.30	Measurement of leakage rates through apparatus and supporting construction completed and removal of pressure sensitive tapes
10.30	Measurement of total leakage rates started.
18.20	Ambient temperature test ended
Medium Temperature Test	
00.00	Setup of displacement transducer completed and heat up of the test chamber cavity started.
30.00	The mean temperature of the test chamber reached 200 °C, no further significant change on the specimen was observed.
30.10	Measurement of total leakage rates started.
37.20	Measurement of total leakage rates ended
37.30	The door gaps were sealed with pressure sensitive tapes.
39.20	Measurement of leakages rate through apparatus and supporting construction started.
47.30	Test ended.
Post-test observation	
1. The static smoke barrier was remained intact in positions without significant deterioration.	

APPENDIX C – DATA RECORDED DURING THE TEST

Table 2 - Lateral deflections of the specimen after the measurement of Q_{total} during the medium temperature test, as viewed from the unexposed face.

Location \ Specimen	Specimen
D1	0.0
D2	-0.3
D3	0.0
D4	0.2
D5	0.2

Positive deflections indicate movement away the test chamber (see also Figure 2 for the locations).

APPENDIX D – PRODUCT INFORMATION FROM TEST SPONSOR

(The information provided by the test sponsor, which was not verified by RED or unless specified.)

Item	Description
<p>1</p>	<p>Curtain Wall Unit</p> <p>Manufacturer : Midi Aluminium Fabricator Limited</p> <p>Model : CW</p> <p>Overall dimensions : 3,000 mm wide by 1,000 mm height*</p> <p>Section sizes : 200 mm thick*</p> <p>Framework : Curtain Wall System</p> <p>Transom cladding : Aluminium extrusion</p> <p>Fixing : Hanger + Bracket</p>
<p>2</p>	<p>Static Smoke Barrier</p> <p>Brand : Midi Aluminium Fabricator Limited</p> <p>Material : Aluminum sheet</p> <p>Density : 2,680 kg/m³</p> <p>Thickness : 1.5 mm</p> <p>Fixing method : i) Fixed to the concrete slab by #9 screws @ 500 mm c/c, and the interface sealed with DC791 weather sealant</p> <p>ii) Fixed to the transom by DC 791 weather sealant with backing rod</p>
<p>3</p>	<p>Fire Rated Sealant</p> <p>Brand : Dow Corning</p> <p>Model : DC791</p> <p>Application location : i) Gap between curtain wall unit and smoke barrier</p> <p>ii) Gap between smoke barrier and concrete</p> <p>iii) Overlapped joint between the smoke barrier</p>

Notes: * Verified on site by RED. # As shown on the test construction.

