



工程指示 / 要求簡箋(E.I.)

工程指示編號：EI / 1340 / 19

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 吊趟路軌用螺絲

收件人：Maggie / 洪哥

發件人：Eric Liu

日期：11/12/2019

□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：

請按配件 BM 訂購螺絲送地盤，吊趟路軌安裝用

HUS3-C M6*60mm 長 (已計數)

供應商回覆需要 4 個月貨期，約 2020 年 4 月 到貨

謝謝！

請在 2019/ / _____ 前完成上列要求。附：1 頁 BM 洪哥 catalogue

以上項目為：

- | | | |
|---------------------------------|--------------------------------------|--------------------------------|
| <input type="checkbox"/> 原合約工程包 | <input type="checkbox"/> 原合約工程加 / 減賬 | <input type="checkbox"/> 新工程報價 |
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原因：-

分發東莞各部門：

- | | | | |
|--------------------------------------|-------------------------------------|-----------------------------------|---|
| <input type="checkbox"/> 生產技術總監 □連附件 | <input type="checkbox"/> 技術部 □連附件 | <input type="checkbox"/> 生產部 □連附件 | <input type="checkbox"/> 機械設計部 □連附件 |
| <input type="checkbox"/> 採購部 □連附件 | <input type="checkbox"/> 生產統籌部 □連附件 | | |
| <input type="checkbox"/> 質檢部 □連附件 | <input type="checkbox"/> 會計部 □連附件 | <input type="checkbox"/> 報關組 □連附件 | <input type="checkbox"/> 其他 <u>楊榮輝</u> □連附件 |

分發其他分判：

- | |
|-----------------------------------|
| <input type="checkbox"/> 王禮秋 □連附件 |
|-----------------------------------|


分發香港各部門：

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|--|------------------------------------|--|--|
| <input type="checkbox"/> 行政部 □連附件 | <input type="checkbox"/> 會計部 □連附件 | <input checked="" type="checkbox"/> <u>洪哥</u> 統籌部 □連附件 | <input checked="" type="checkbox"/> 工程部地盤科文 □連附件 <u>洪哥</u> |
| <input checked="" type="checkbox"/> 採購部 □連附件 | <input type="checkbox"/> QS 部 □連附件 | <input type="checkbox"/> 維修部 □連附件 | <input type="checkbox"/> 其他 _____ □連附件 |

傳遞編號：

發件人簽署：

項目經理簽署：

 美特鋁質有限公司 MIDI Aluminium Fabricator Ltd.	J-837	計算:	日期:	送呈: Jason哥
	觀塘裕民坊	核對:	日期:	副本:
廠用配件B.M.表	幕牆 - 大樓	批准:	日期:	
BM編號:	吊趟			此B.M依據 計算

序號	修改標示	配件圖號	物料編號	配件名稱	顏色/材質	實用	後備	總數	單位	備注
1			HILTI	HUS3-C M6*60mm		9576	424	10000	枚	修吊趟路軌用
2										



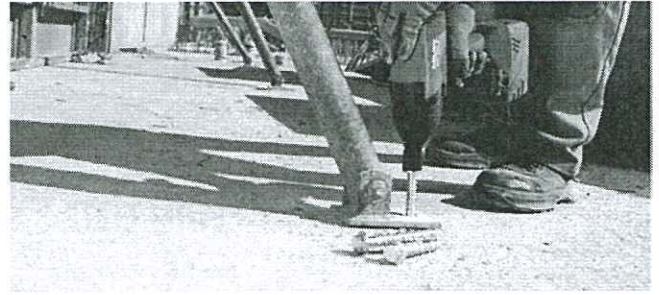
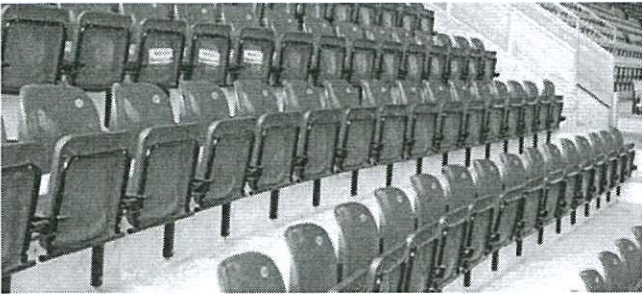
Submission Folder

Hilti HUS3 Screw Anchor

Product Information	1-3
Technical Data	4-17
Country of Origin	18-19
Project Reference	20-21

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Screw anchor HUS3



BASE MATERIALS

- Concrete (aerated)
- Concrete (cracked)
- Concrete (hollow deck)
- Concrete (uncracked)
- Masonry (solid)

APPLICATIONS

- Railings and handrails
- Structural steel
- Formwork and bracing
- Temporary applications
- Base plate fastening in steel and metal applications

ADVANTAGES

- Higher productivity - less drilling and fewer operations than with conventional anchors
- Reduced edge and spacing distances
- Hex bolt head style for convenient installation using the SIW 22T-A impact wrench
- Adjustable screw
- For use in both cracked and uncracked concrete
- Reusable (applicable for HUS3-H/-C 8, 10 and HUS3-H 14)

Technical data

Material composition	Steel, zinc-plated (min. 5 µm)
Material, corrosion	Carbon steel
Suitable for cracked concrete with redundant fastenings	Yes

Recommended load (kN), non-cracked concrete at 25N/mm², safety factor(γ)=3

Model	Size	M6	M8	M10	M14 (HUS3-H only)
Standard embedment depth		55	60	75	85
HUS3-H/C	Tensile Load, N _{rec}	3.0	4.0	6.7	9.1
	Shear Load, V _{rec}	4.2	5.7	9.3	15.0

Recommended load (kN), cracked concrete at 25N/mm², safety factor(γ)=3

Model	Size	M6	M8	M10	M14 (HUS3-H only)
Standard embedment depth		-	60	75	85
HUS3-H/C	Tensile Load, N _{rec}	3)	3.0	5.4	6.5
	Shear Load, V _{rec}	3)	5.7	9.3	13.0

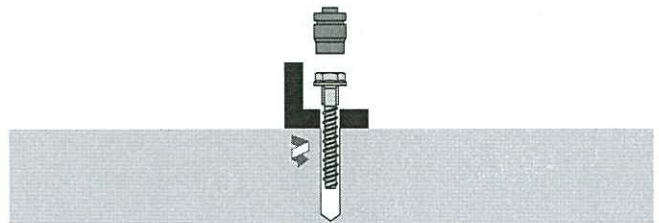
Remarks:

- 1) All the data applies to no edge distance, spacing and other influences
- 2) For detail design method, please refer to Fastening Technology Manual
- 3) For redundant fastening only, please contact Hilti for technical assistance

Approvals

ETA, Seismic ETA-13/1038 for HUS3 screw anchor

Approvals and test reports may apply to selected products only. Please refer to the documents for details.



These are abbreviated instructions which may vary according to the application.

Watch Video



HUS3-H (Hexagon head, galvanized min. 5um)



Order Now



Ordering designation	Anchor size	Drill bit diameter	Drilling Hole Depth at embed. 2	Fastening thickness at embed.2	Base plate clearance hole	Sales pack quantity	Item number
HUS3-H 6x40/5	6	6 mm	-	-	9 mm	100 pc	416735
HUS3-H 6x60/5/25	6	6 mm	65 mm	5 mm	9 mm	100 pc	416736 ¹⁾
HUS3-H 6x80/25/45	6	6 mm	65 mm	25 mm	9 mm	100 pc	416737 ¹⁾
HUS3-H 6x100/45/65	6	6 mm	65 mm	45 mm	9 mm	100 pc	416738 ¹⁾
HUS3-H 6x120/65/85	6	6 mm	65 mm	65 mm	9 mm	100 pc	416739 ¹⁾
HUS3-H 8x55 5/-/-	8	8 mm	-	-	12 mm	50 pc	2079794
HUS3-H 8x65 15/5/-	8	8 mm	70 mm	5 mm	12 mm	50 pc	2079795
HUS3-H 8x75 25/15/5	8	8 mm	70 mm	15 mm	12 mm	50 pc	2079796
HUS3-H 8x85 35/25/15	8	8 mm	70 mm	25 mm	12 mm	50 pc	2079797
HUS3-H 8x100 50/40/30	8	8 mm	70 mm	40 mm	12 mm	50 pc	2079798 ¹⁾
HUS3-H 8x120 70/60/50	8	8 mm	70 mm	60 mm	12 mm	50 pc	2079799 ¹⁾
HUS3-H 8x150 100/90/80	8	8 mm	70 mm	90 mm	12 mm	50 pc	2079910 ¹⁾
HUS3-H 10x60 5/-/-	10	10 mm	-	-	14 mm	50 pc	2079911 ¹⁾
HUS3-H 10x70 15/-/-	10	10 mm	-	-	14 mm	50 pc	2079912
HUS3-H 10x80 25/5/-	10	10 mm	85 mm	5 mm	14 mm	50 pc	2079913
HUS3-H 10x90 35/15/5	10	10 mm	85 mm	15 mm	14 mm	50 pc	2079914
HUS3-H 10x100 45/25/15	10	10 mm	85 mm	25 mm	14 mm	50 pc	2079915
HUS3-H 10x110 55/35/25	10	10 mm	85 mm	35 mm	14 mm	50 pc	2079916
HUS3-H 10x130 75/55/45	10	10 mm	85 mm	55 mm	14 mm	50 pc	2079917 ¹⁾
HUS3-H 10x150 95/75/65	10	10 mm	85 mm	75 mm	14 mm	50 pc	2079918
HUS3-H 14x75 10/-/-	14	14 mm	-	-	18 mm	16 pc	2079921 ¹⁾
HUS3-H 14x100 35/15/-	14	14 mm	95 mm	15 mm	18 mm	16 pc	2079922
HUS3-H 14x130 65/45/15	14	14 mm	95 mm	45 mm	18 mm	16 pc	2079923
HUS3-H 14x150 85/65/35	14	14 mm	95 mm	65 mm	18 mm	16 pc	2079924

¹⁾ This is a non-stock item. For detailed lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

HUS3-C (Countersunk torx head, galvanized min. 5um)



Order Now



比款

Ordering designation	Anchor size	Drill bit diameter	Drilling Depth at embed. 2	Fastening thickness at embed.2	Base plate clearance hole	Bit size	Sales pack quantity	Item number
HUS3-C 6x40 /5	6	6 mm	35 mm	5 mm	9 mm	T30	100 pc	2119774
HUS3-C 6x60 /5/25	6	6 mm	55 mm	5 mm	9 mm	T30	100 pc	2119775
HUS3-C 6x70 /15/35	6	6 mm	55 mm	15 mm	9 mm	T30	100 pc	2119776
HUS3-C 8x65 15/-/-	8	8 mm	-	-	12 mm	T45	50 pc	2079931
HUS3-C 8x75 25/15/-	8	8 mm	70 mm	15 mm	12 mm	T45	50 pc	2079932
HUS3-C 8x85 35/25/15	8	8 mm	70 mm	25 mm	12 mm	T45	50 pc	2079933
HUS3-C 10x70 15/-/-	10	10 mm	-	-	14 mm	T50	50 pc	2079934
HUS3-C 10x90 35/15/-	10	10 mm	85 mm	15 mm	14 mm	T50	50 pc	2079935
HUS3-C 10x100 45/25/15	10	10 mm	85 mm	25 mm	-	T50	50 pc	2079936 ¹⁾

¹⁾ This is a non-stock item. For detailed lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

HUS3-I (Internally threaded, galvanized min. 5um)



Ordering designation	Anchor size	Drill bit diameter	Drilling Depth at embed. 2	Fastening thickness at embed.2	Sales pack quantity	Item number
HUS3-I 6x35 M8/M10	6	6 mm	45 mm	-	100 pc	416740 ¹⁾
HUS3-I 6x35 M8/M10 bucket	6	6 mm	45 mm	-	300 pc	428662 ¹⁾
HUS3-I 6x55 M8/M10	6	6 mm	45 mm	20 mm	100 pc	423180

¹⁾ This is a non-stock item. For detailed lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

HUS3-A (Externally threaded, galvanized min. 5um)



Ordering designation	Anchor size	Drill bit diameter	Drilling Depth at embed. 2	Fastening thickness at embed.2	Sales pack quantity	Item number
HUS3-A 6x35 M8 /16	6	6 mm	45 mm	-	100 pc	416741
HUS3-A 6x35 M10 /21	6	6 mm	45 mm	-	100 pc	416742
HUS3-A 6x55 M8 /16	6	6 mm	45 mm	20 mm	100 pc	416743
HUS3-A 6x55 M10 /21	6	6 mm	45 mm	20 mm	100 pc	416744

Please visit Hilti website for the latest item numbers and related products

HUS3-P (Pan head, galvanized min. 5um)



Ordering designation	Anchor size	Drill bit diameter	Drilling Depth at embed. 2	Fastening thickness at embed.2	Base plate clearance hole	Sales pack quantity	Item number
HUS3-P 6x40 /5	6	6 mm	45 mm	5 mm	9 mm	100 pc	416745 ¹⁾
HUS3-P 6x60 /5/25	6	6 mm	45 mm	5 mm	9 mm	100 pc	416746 ¹⁾
HUS3-P 6x80 /25/45	6	6 mm	45 mm	25 mm	9 mm	100 pc	416747 ¹⁾

¹⁾ This is a non-stock item. For detailed lead time information please contact your Hilti representative.

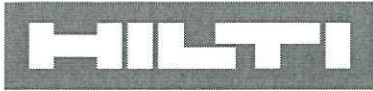
Please visit Hilti website for the latest item numbers and related products

HUS3 setting tools and accessories



Ordering designation	Corresponding anchor	Sales pack quantity	Item number
SIW 22T-A-3.3AH (21.6V, 2x 3.3Ah BATTERIES, 1x STANDARD CHARGER)	-	1 pc	3469136
IMPACT SOCKET SI-SA 1/2" - 7/16" HEX	-	1 pc	2094451
CHECK GAUGE HRG 8	HUS3-H/C 8	1 pc	2092003
CHECK GAUGE HRG 10	HUS3-H/C 10	1 pc	2090674
CHECK GAUGE HRG 14	HUS3-H 14	1 pc	2090675
DRIVER BIT S-SY TX45 35 HUS (5)	-	5 pc	2094673
DRIVER BIT S-SY TX50 35 HUS (5)	-	5 pc	2094675

Please visit Hilti website for the latest item numbers and related products



HUS3 Screw anchor

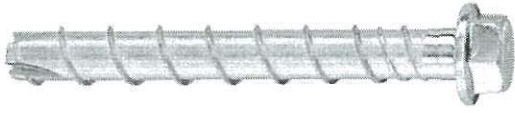




Ultimate performance screw anchor








Anchor technology & design

Heavy / medium duty metal anchors

Plastic / light duty / other metal anchors

Chemical anchors

Anchor version	Benefits
 <p>HUS3-H (6,8,10,14)</p>	<ul style="list-style-type: none"> - High productivity - less drilling and fewer operations compared to conventional anchors - ETA approval for cracked and non-cracked concrete - ETA approval for Seismic C1 and C2 ^{a)} - ETA approval for adjustability (unscrew-rescrew) - High loads - Small edge and spacing distance - abZ (DIBt) approval for reusability in fresh concrete ($f_{ck, cube} = 10/15/20 \text{ Nmm}^2$) for temporary applications - Three embedment depths for maximum design flexibility - Forged-on washer and hexagon head with no protruding thread - Through fastening
 <p>HUS3-C (6,8,10,14)</p>	
 <p>HUS3-A (6)</p>	
 <p>HUS3-P (6)</p>	
 <p>HUS3-I (6)</p>	

Base material	Load conditions
 <p>Uncracked concrete</p>	 <p>Static/ quasi-static</p>  <p>Seismic ETA-C1,C2</p>  <p>Fire resistance</p>
 <p>Cracked concrete (Tension zone)</p>	
 <p>Solid brick</p>	
 <p>Autoclaved aerated concrete</p>	

Installation conditions	Other information
 <p>Small edge distance and spacing</p>	 <p>European Technical Assessment</p>  <p>CE conformity</p>  <p>PROFIS Anchor design software</p>  <p>DIBt Approval Reusability</p>

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European Technical Assessment ^{b)}	DIBt, Berlin	ETA-13/1038 / 2016-12-08
Fire test report	DIBt, Berlin	ETA-13/1038 / 2016-12-08

a) Please contact your Hilti representative for seismic resistance data
 b) All data given in this section according ETA-13/1038 issue 2016-12-08.

Recommended general notes

* The below clauses based on Hilti product qualifications are for references only. Selection of clauses by the engineer shall be based on the specific application needs. Please contact Hilti's technical team for further details.

- Anchor shall be made of galvanised steel of sizes 6/8/10/14, which when screwed into a predrilled cylindrical drill hole cuts an internal thread into the member while setting, creating a mechanical interlock with the base material and the thread.
- The anchor must have European Technical Assessment (ETA); evaluating performance in cracked and un-cracked concrete and seismic conditions
- Anchor shall be installed as per the manufacturer's approved procedure and equipment
- Anchor shall have identification marks on the bolt head that can be used to verify the anchor type and length during inspection
- The recommended tension load of the anchor should not be not less than ___kN in cracked concrete with concrete strength at 25N/mm² (including overall global safety factor=3)
- Effective anchorage depth of the anchor should not exceed ___mm

For HUS3-H/-C 8, 10 and 14

- Anchor must be approved ofr adjustability as per the manufacturer's approved procedure and equipment

Basic loading data (for a single anchor)

All data in this section applies to:

- Static and quasi-static loading
- Correct setting (See setting instruction)
- No edge distance and spacing influence
- *Steel* failure
- Minimum base material thickness
- Concrete C 20/25, f_{ck,cube}=25 N/mm². Concrete strength influence factor can be applied when concrete grade > C20/25, when steel failure does not govern.

Anchorage depth

Anchor size	6		8			10			14			
Type	HUS3-	H,C, A,I	P	H,C			H,C			H		
Nominal embedment depth h _{nom} [mm]	h _{nom1}		h _{nom1}	h _{nom2}	h _{nom3}	h _{nom1}	h _{nom2}	h _{nom3}	h _{nom1}	h _{nom2}	h _{nom3}	
	55		50	60	70	55	75	85	65	85	115	

Characteristic resistance

Anchor size	6		8			10			14			
Type	HUS3-	H,C, A,I	P	H,C			H,C			H		
Non-cracked concrete												
Tension N _{Rk} [kN]	9,0	7,5	9,0	12,0	16,0	12,0	20,0	27,8	17,5	27,3	44,4	
Shear V _{Rk} [kN]	12,5	12,5	12,8	19,0	22,0	13,5	30,0	34,0	35,0	54,5	62,0	
Cracked concrete												
Tension N _{Rk} [kN]	6,0	6,0	6,0	9,0	12,0	9,7	16,2	19,8	12,5	19,4	31,7	
Shear V _{Rk} [kN]	12,5	12,5	9,1	19,0	22,0	9,7	30,0	34,0	24,9	38,9	62,0	



Design resistance ^{a)}

Anchor size		6		8			10			14		
Type	HUS3-	H,C, A,I	P	H,C			H,C			H		
Non-cracked concrete												
Tension N_{Rd}	[kN]	5,0	4,2	6,0	8,0	10,7	8,0	13,3	18,5	11,7	18,2	29,6
Shear V_{Rd}	[kN]	8,3	8,3	8,5	12,7	14,7	9,0	20,0	22,7	23,3	36,3	41,3
Cracked concrete												
Tension N_{Rd}	[kN]	3,3	3,3	4,0	6,0	8,0	6,4	10,8	13,2	8,3	13,0	21,1
Shear V_{Rd}	[kN]	8,3	8,3	6,1	12,7	14,7	6,4	20,0	22,7	16,6	25,9	41,3

a) Includes material partial factor according to ETA-13/1038 issue 2016-12-08

Recommended loads ^{a)}

Anchor size		6		8			10			14		
Type	HUS3-	H,C, A,I	P	H,C			H,C			H		
Non-cracked concrete												
Tension N_{Rec}	[kN]	3,0	2,5	3,0	4,0	5,3	4,0	6,7	9,3	5,8	9,1	14,8
Shear V_{Rec}	[kN]	4,2	4,2	4,3	6,3	7,3	4,5	10,0	11,3	11,7	18,2	20,7
Cracked concrete												
Tension N_{Rec}	[kN]	2,0	2,0	2,0	3,0	4,0	3,2	5,4	6,6	4,2	6,5	10,6
Shear V_{Rec}	[kN]	4,2	4,2	3,0	6,3	7,3	3,2	10,0	11,3	8,3	13,0	20,7

a) Includes global safety factor of 3.0

Materials

Mechanical properties

Anchor size		6	8	10	14
Type	HUS3-	H,C,A,I,P	H,C	H,C	H
Nominal tensile strength f_{uk}	[N/mm ²]	930	810	805	730
Yield strength f_{yk}	[N/mm ²]	745	695	690	630
Stressed cross-section A_s	[mm ²]	26,9	48,4	77,0	131,7
Moment of resistance W	[mm ³]	19,6	47	95	213
Design bending resistance $M_{Rd,s}^0$	[Nm]	21	46	92	187

Material quality

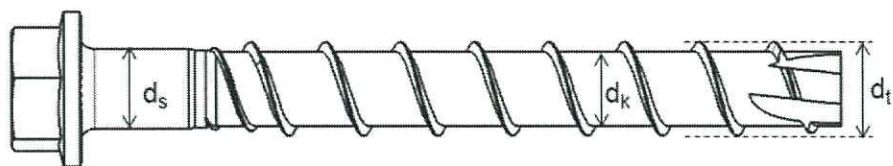
Type	Material
HUS3 - H,A,C,P,I	Carbon steel, galvanized

Type	Part		
HUS3-H	Hexagonal head		
HUS3-C	Countersunk head		
HUS3-A	External thread		
HUS3-P	Pan head		
HUS3-I	Internal thread		

Anchor dimensions ^{a)}

Anchor size		6	8	10	14
Type	HUS3-	H,C,A,I,P	H,C	H,C	H
Threaded outer diameter	d_t [mm]	7,85	10,30	12,40	16,85
Core diameter	d_k [mm]	5,85	7,85	9,90	12,95
Shaft diameter	d_s [mm]	6,15	8,45	10,55	13,80
Stressed section	A_s [mm ²]	26,9	48,4	77,0	131,7

a) Please refer to the product catalogue on the Hilti Hong Kong website for standard portfolio



HUS3: Hilti Universal Screw 3rd generation

H: Hexagonal head

10: Screw diameter

45/25/15: Maximum thickness fixture $t_{fix1}/t_{fix2}/t_{fix3}$ related to the embedment depth $h_{nom1}/h_{nom2}/h_{nom3}$ (see Annex B3).



Screw length and thickness of fixture for HUS3-H/-C/-A/-I/-P^{a)}

Anchor size		6					
Nominal embedment depth [mm]		h _{nom1}					
Thickness of fixture		55					
		t _{fix1}	t _{fix2}	t _{fix1}	t _{fix2}	t _{fix1}	t _{fix2}
Length of screw [mm]	55	-	-	0	0	-	-
	60	5	5	-	-	5	5
	70	-	15	-	-	-	-
	80	25	-	-	-	25	-
	100	45	-	-	-	-	-
	120	65	-	-	-	-	-
	135	-	-	80	-	-	-
	155	-	-	100	-	-	-
	175	-	-	120	-	-	-
	195	-	-	140	-	-	-

a) Please refer to the product catalogue on the Hilti Hong Kong website for standard portfolio

Screw length and thickness of fixture for HUS3-C^{a)}

Anchor size		8			10		
Nominal embedment depth [mm]		h _{nom1}	h _{nom2}	h _{nom3}	h _{nom1}	h _{nom2}	h _{nom3}
Thickness of fixture		t _{fix1}	t _{fix2}	t _{fix3}	t _{fix2}	t _{fix1}	t _{fix3}
Length of screw [mm]	65	15	5	-	-	-	-
	70	-	-	-	15	-	-
	75	25	15	-	-	-	-
	85	35	25	15	-	-	-
	90	-	-	-	35	15	-
	100	-	-	-	45	25	15

a) Please refer to the product catalogue on the Hilti Hong Kong website for standard portfolio

Screw length and thickness of fixture for HUS3-H^{a)}

Anchor size		8			10			14		
Nominal embedment depth [mm]		h _{nom1}	h _{nom2}	h _{nom3}	h _{nom1}	h _{nom2}	h _{nom3}	h _{nom1}	h _{nom2}	h _{nom3}
Thickness of fixture		t _{fix1}	t _{fix2}	t _{fix3}	t _{fix1}	t _{fix2}	t _{fix3}	t _{fix1}	t _{fix2}	t _{fix3}
Length of screw [mm]	55	5	-	-	-	-	-	-	-	-
	60	-	-	-	5	-	-	-	-	-
	65	15	5	-	-	-	-	-	-	-
	70	-	-	-	15	-	-	-	-	-
	75	25	15	5	-	-	-	10	-	-
	80	-	-	-	25	5	-	-	-	-
	85	35	25	15	-	-	-	-	-	-
	90	-	-	-	35	15	5	-	-	-
	100	50	40	30	45	25	15	35	15	-
	110	-	-	-	55	35	25	-	-	-
	120	70	60	50	-	-	-	-	-	-
	130	-	-	-	75	55	45	65	45	15
	150	100	90	80	95	75	65	85	65	35

a) Please refer to the product catalogue on the Hilti Hong Kong website for standard portfolio

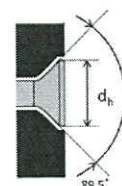
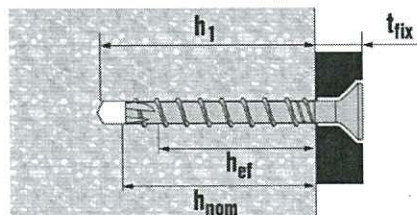
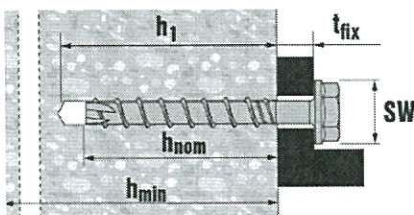
Setting information

Setting details

Anchor size		6				
Type	HUS3-	H	C	A	P	I
Nominal embedment depth	[mm]	h_{nom1} 55				
Nominal diameter of drill bit	d_0 [mm]	6				
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	6,4				
Clearance hole diameter	$d_f \leq$ [mm]	9				
Wrench size	SW [mm]	13	-	13	-	13
Countersunk head diameter	d_h [mm]	-	11,5	-		
Torx size	TX [mm]	-	30	-	30	-
Depth of drill hole in floor/wall position	$h_1 \geq$ [mm]	65				
Depth of drill hole in ceiling position	$h_1 \geq$ [mm]	58				
Installation Torque	T_{inst} [mm]	25				

Setting details

Anchor size		8			10			14		
Type	HUS3-	H, C			H, C			H		
Nominal embedment depth	[mm]	h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}
		50	60	70	55	75	85	65	85	115
Nominal diameter of drill bit	d_0 [mm]	8			10			14		
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45			10,45			14,50		
Clearance hole diameter	$d_f \leq$ [mm]	12			14			18		
Wrench size	SW [mm]	13			15			21		
Countersunk head diameter	d_h [mm]	18			21			-		
Torx size	TX [mm]	45			50			-		
Depth of drill hole in floor/wall position	$h_1 \geq$ [mm]	60	70	80	65	85	95	75	95	125
Depth of drill hole in ceiling position	$h_1 \geq$ [mm]	-	80	90	-	95	105	-		



Installation equipment

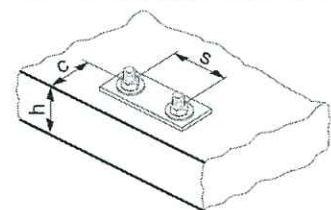
Anchor size	6	8	10	14
Type	HUS3- H,C,A,I,P	H,C	H,C	H
Rotary hammer	TE 2 -TE 7	TE 2 – TE 30		
Drill bit for concrete, solid clay brick and solid sand-lime brick	CX 6	CX 8	CX 10	CX 14
Drill bit for aerated concrete	CX 5	CX 6	CX 8	-
Socket wrench insert	S-NSD 13 ½"	SI-S ½" 13S	SI-S ½" 15S	SI-S ½" 21S
Torx	TX30	S-SY TX45	S-SY TX50	-
Tube for temporary application ^{a)}	-	HRG 8	HRG 10	HRG 14
Setting tool for solid brick and aerated concrete	-	SFH 22 A		
Setting tool for hollow core slab	SIW 14 A SIW 22 A	SIW 22 A		

Setting details

Anchor size	6	8	10	14						
Type	HUS3- H,C,A,I,P	H,C	H,C	H						
Nominal embedment depth d_o [mm]	55	50	60	70	55	75	85	65	85	115
Minimum base material thickness $d_{cut} \leq$ [mm]	100	100	100	120	100	130	140	120	160	200
Minimum spacing $d_f \leq$ [mm]	35	40	50	50	50	50	60	60	75	75
Minimum edge distance SW [mm]	35	50	50	50	50	50	60	60	75	75
Critical spacing for splitting failure d_n [mm]	126	120	140	170	130	180	220	170	200	280
Critical edge distance for splitting failure TX [mm]	63	60	70	85	65	90	110	85	100	140
Critical spacing for concrete cone failure $h_i \geq$ [mm]	3 h_{ef}									
Critical edge distance for concrete cone failure $h_i \geq$ [mm]	1,5 h_{ef}									

For spacing (edge distance) smaller than critical spacing (critical edge distance) the design loads have to be reduced (see system design resistance).

Critical spacing and critical edge distance for splitting failure apply only for non-cracked concrete. For cracked concrete only the critical spacing and critical edge distance for concrete cone failure are decisive.



Setting instructions

* For detailed information on installation see instruction for use given with the package of the product.

Setting instruction without adjustment	
1. Drilling 	2. Cleaning
3. Installing the anchor by impact screw driver 	4. Checking
Setting instruction with adjustment	
1. Drilling 	2. Cleaning
3. Inserting the anchor 	4. Anchor installed
5. Checking 	6. Adjusting the anchor by impact screw driver
7. Checking 	8. Adjusting the anchor by impact screw driver
9. Checking 	

The anchor can be adjusted max. two times.

The total allowed thickness of shims added during the adjustment process is 10 mm.

The final embedment depth after adjustment process must be larger or equal than h_{nom2} or h_{nom3} .

Basic loading data (for a single anchor) in solid masonry units
All data in this section applies to:

- Load values valid for holes drilled with TE rotary hammers in hammering mode
- Correct anchor setting (see instruction for use, setting details)
- The core/material ratio may not exceed 15 % of a bed joint area
- The brim area around holes must be at least 70mm
- Edge distances, spacing and other influences, see below
- All data given in this section according to Hilti Technical Data

Nominal embedment depth

Anchor size	6	8	10
Nominal embedment depth h_{nom} [mm]	55	60	75

Recommended loads for HUS3

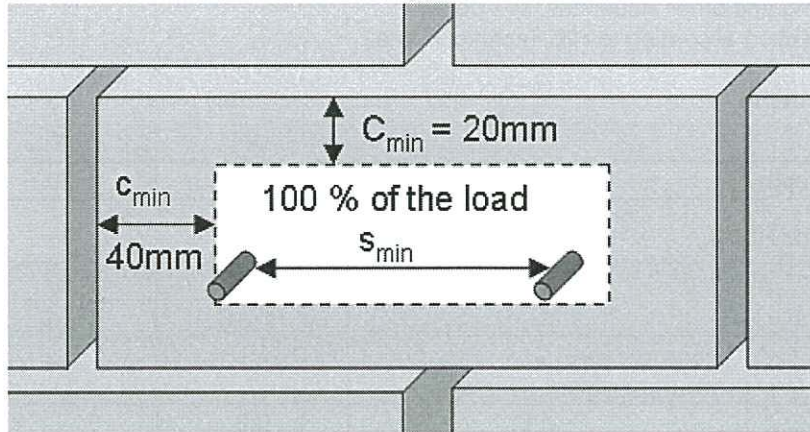
Anchor size		6	8	10
		A, H, I, C, P	H, C	H, C
Compressive strength class [N/mm ²]		F _{rec} Tensile and shear loads		
	Solid clay ≥ 8	0,6	-	-
	brick Mz ≥ 10	0,7	-	-
	12/2,0 ≥ 12	0,8	1,1	1,4
	DIN 105 / ≥ 16	0,9	-	-
	EN 771-1 ≥ 20	0,9	1,6	2,0
	Solid clay ≥ 8	0,8	-	-
	brick Mz ≥ 10	0,9	-	-
	12/2,0 ≥ 12	1,0	1,3	1,4
	DIN 105 / ≥ 16	1,1	-	-
	EN 771-1 ≥ 20	1,2	1,7	2,1
	Aerated concrete PPW 6-0,4 ≥ 6 DIN 4165/ EN 771-4	0,4	0,7	0,9

Permissible anchor location in brick and block walls
Edge distance and spacing influence

- The technical data for HUS3 anchors are reference loads for MZ 12, KS 12 and PPW 6. Due to the large variation of natural stone slid bricks, on site anchor testing is recommended to validate technical data
- The HUS3 anchor was installed and tested in center of solid bricks as shown. The HUS3 anchor was not tested in the mortar joint between solid bricks or in hollow bricks, however a load reduction is expected
- For brick walls where anchor position in brick can not be determined, 100 % anchor testing is recommended
- Distance to free edge free edge to solid masonry (Mz and KS) units ≥ 200 mm
- Distance to free edge free edge to solid masonry (autoclaved aerated gas concrete) units ≥ 170 mm
- The minimum distance to horizontal and vertical mortar joint (c_{min}) is started in drawing below
- Minimum anchor spacing (s_{min}) in one brick/block is ≥ 80 mm

Limits

- All data is for multiple use for non-structural applications
- Plaster, graveling, lining or levelling courses are regarded as non-bearing and may not be taken into account for the calculation of embedment depth
- The decisive resistance to tension loads is the lower value of N_{rec} (brick breakout, pull out) and $N_{max,pb}$ (pull out of one brick)



Basic loading data for single anchor in hollow core slab

Basic loading data

All data in this section applies to

- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Ratio core width / web thickness $w/e \leq 4,2$
- Concrete C 30/37 to C 50/60

Nominal embedment depth

Anchor size			8	10
Type		HUS3	C, H	C, H
Bottom flange thickness	$d_b \geq$	[mm]	30	30
All load directions	F_{Rk}	[kN]	2,0	2,0

Design resistance

Anchor size			8	10
Type		HUS3	C, H	C, H
Bottom flange thickness	$d_b \geq$	[mm]	30	30
All load directions	F_{Rk}	[kN]	1,3	1,3

Nominal embedment depth

Anchor size			8	10
Type		HUS3	C, H	C, H
Bottom flange thickness	$d_b \geq$	[mm]	30	30
All load directions ^{a)}	F_{Rk}	[kN]	0,95	0,95

a) With overall partial safety factor for action $\gamma = 1,4$. The partial safety factors for action depend on the type of loading and shall be taken from national regulations.

Requirements for redundant fastening

The definition of redundant fastening according to Member States is given in the ETAG 001 Part six, Annex 1, In Absence of a definition by a Member State the following default values may be taken

Minimum number of fixing points	Minimum number of anchors per fixing point	Maximum design load of action NSd per fixing point ^{a)}
3	1	2 kN
4	1	3 kN

a) The value for maximum design load of actions per fastening point NSd is valid in general that means all fastening points are considered in the design of the redundant structural system. The value NSd may be increased if the failure of one (= most unfavourable) fixing point is taken into account in the design (serviceability and ultimate limit state) of the structural system e.g. suspended ceiling.

Setting

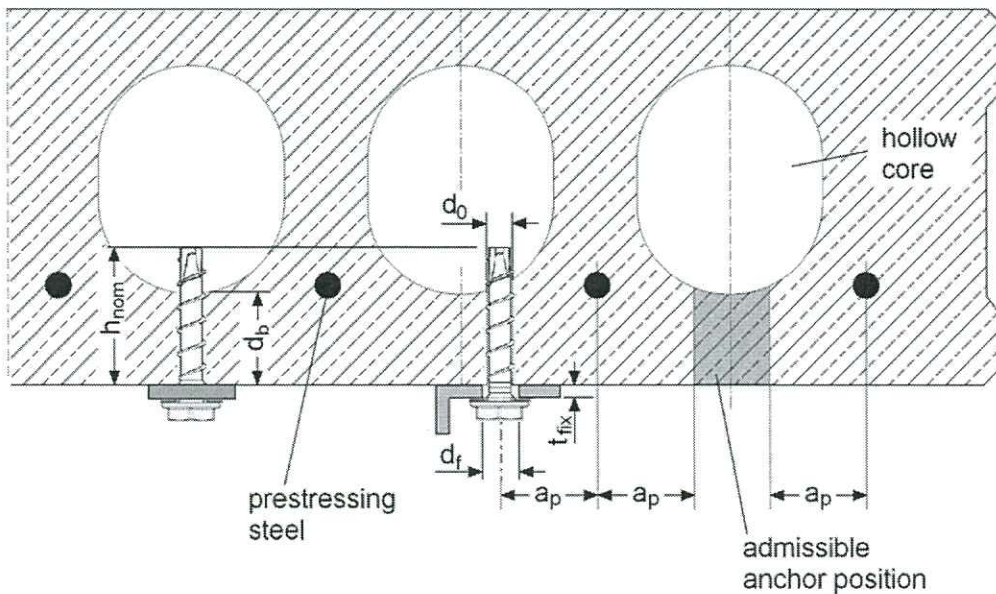
Anchor size	8	10
Type	HUS3	C, H
Rotary hammer	Hilti TE 6 / TE 7	
drill bit	TE-CX 4	
Impact screw driver	SIW 22 A, 1 st or 2 nd gear	

Setting details

Anchor size		8	10
Type	HUS3	C, H	C, H
Nominal embedment depth	$h_{nom} \geq$ [mm]	40	45
Bottom flange thickness	$d_b \geq$ [mm]	30	30
Nominal diameter of drill bit	d_o [mm]	8	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45	10,45
Nominal depth of drill hole a)	$h_1 \geq$ [mm]	40	40
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	12	14
Nominal effective anchorage depth	h_{ef} [mm]	30	30
Distance between anchor position and prestressing steel	$a_p \geq$ [mm]	50	50

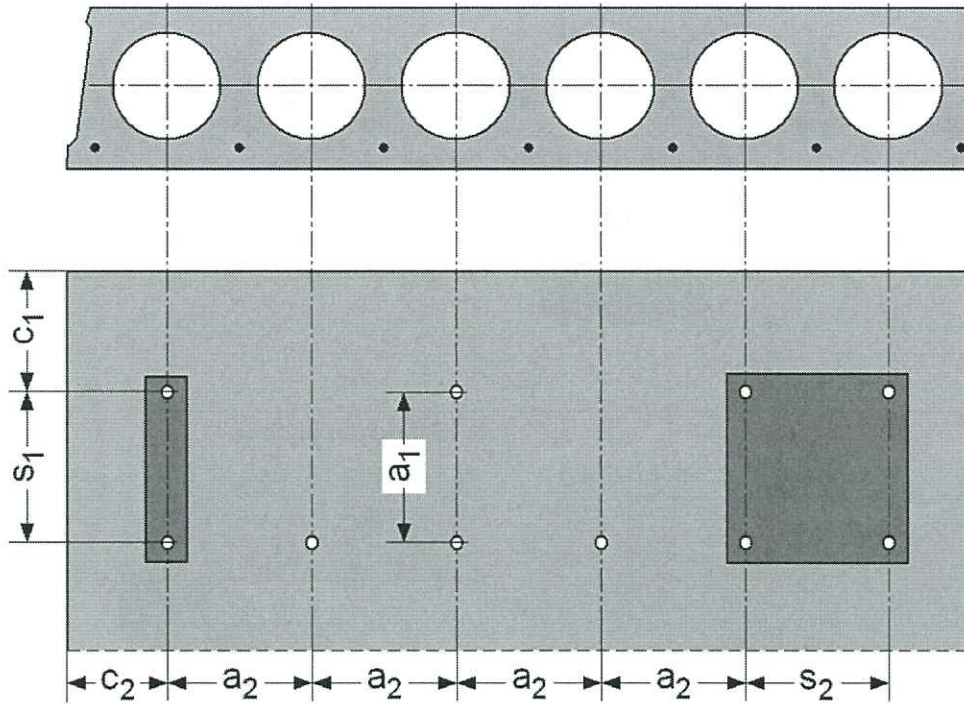
a) Nominal depth of drill hole may be deeper than bottom flange thickness

Anchor Type	Size	Length [mm]	$d_b=30$ [mm]		$d_b=35$ [mm]		$d_b=40$ [mm]		$d_b=50$ [mm]	
	[mm]		$t_{fix,min}$ [mm]	$t_{fix,max}$ [mm]	$t_{fix,min}$ [mm]	$t_{fix,max}$ [mm]	$t_{fix,min}$ [mm]	$t_{fix,max}$ [mm]	$t_{fix,min}$ [mm]	$t_{fix,max}$ [mm]
HUS3-H	8	55	5	15	5	10	5	5	5	5
		65	5	25	5	20	5	15	5	5
		75	5	35	5	30	5	25	5	15
		85	15	45	15	40	15	35	15	25
		100	30	60	30	55	30	50	30	40
		120	50	80	50	75	50	70	50	60
		150	80	110	80	105	80	100	80	90
HUS3-C	8	65	15	25	15	20	15	15	15	5
		75	15	35	15	30	15	25	15	15
		85	15	45	15	40	15	35	15	25
HUS3-H	10	60	5	15	5	10	5	5	5	5
		70	15	25	15	20	15	15	15	5
		80	5	35	5	30	5	25	5	15
		90	5	45	5	40	5	35	5	25
		100	15	55	15	50	15	45	15	35
		110	25	65	25	60	25	55	25	45
		130	45	85	45	80	45	75	45	65
		150	65	105	65	100	65	95	65	85
HUS3-C	10	70	15	25	15	20	15	15	15	10
		90	15	45	15	40	15	35	15	25
		100	15	55	15	50	15	45	15	35



Setting details

Anchor size		8	10
Type		C, H	C, H
Minimum edge distance	$c_{min} \geq$ [mm]	100	
Minimum anchor spacing	$s_{min} \geq$ [mm]	100	
Minimum distance between anchor groups	$a_{min} \geq$ [mm]	100	



Setting instructions

* For detailed information on installation see instruction for use given with the package of the product.

Installation in hollow core slabs	
<p>1. Checking the anchor with tube Hilti HSB</p>	<p>2. Positioning pre-stressed steel</p>
<p>3. Marking pre-stressed steel position</p>	<p>4. Marking pre-stressed steel position</p>
<p>5. Drilling</p>	<p>6. Setting the anchor</p>
<p>7. Setting the anchor</p>	<p>8. Checking</p>

Anchor technology & design
Heavy / medium duty metal anchors
Plastic / light duty / other metal anchors
Chemical anchors



Attn. : To whom it may concern

Date : 15th May 2019
Ref. : 042/AM/YW/19

Subject : Hilti HUS3 Screw Anchor

Dear Sir / Madam,

Enclosed please find the information of Hilti HUS3 Screw Anchor

Brand Name : Hilti

Model Name : HUS3-H 10/HUS3-C 10

Manufacturer : Hilti Corporation

Address of Manufacturer : FL-9494, Principality of Liechtenstein.

Supplier : Hilti (Hong Kong) Ltd

Address of Supplier : 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip St.
Kwun Tong, Hong Kong

Country of Origin : Principality of Liechtenstein

Should you have further question, please do not hesitate to contact our Technial Representatives or Customer Service Hotline at 8228-8118.

Yours sincerely,

Yahamali Wijesinghe
Product Manager
Hilti (Hong Kong) Ltd.

Hilti (Hong Kong) Ltd.
701-704 | Tower A | Manulife Financial Centre
223 Wai Yip Street | Kwun Tong
Kowloon | Hong Kong
P +852-8228 8118 | F +852-2954 1751
www.hilti.com.hk



Attn. : To whom it may concern

Date : 15th May 2019

Ref. : 043/AM/YW/19

Subject : Hilti HUS3 Screw Anchor

Dear Sir / Madam,

Enclosed please find the information of Hilti HUS3 Screw Anchor

Brand Name : Hilti

Model Name : HUS3-H 6, 8 & 14/HUS3-C 6 & 8/HUS3-A/HUS3-P/HUS3-I

Manufacturer : Hilti Corporation

Address of Manufacturer : FL-9494, Principality of Liechtenstein.

Supplier : Hilti (Hong Kong) Ltd

Address of Supplier : 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip St.
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Hilti HUS3 Screw Anchor Project Reference

DATE	PROJECT NAME	CONTRACTOR	APPLICATION	PROJECT TYPE
2016	SCL 1109	MING TAI CONSTRUCTION ENGINEERING	STEEL BEAM / BRACKET FIXING	MTR
2016	SCL 1153B	ALSTOM HONG KONG LIMITED	M&E FIXING	MTR
2016	HKZMB HK LINK ROAD BRIDGE 09	DRAGAGES-CHINA HARBOUR-VSL J.V.	STEEL BEAM / BRACKET FIXING	HIGHWAY
2016	TUNG CHUNG RD AREA 39	GAMMON CONSTRUCTION LIMITED	STEEL BEAM / BRACKET FIXING	HOUSING
2016	KAI TAK HK CHILDREN'S HOSPITAL	UNION MANOR LIMITED	M&E FIXING	ASD
2016	TKO GLOBAL SWITCH PH1&2	JUNEFAR ENGINEERING CO. LIMITED	M&E FIXING	PRIVATE/COMMERCIAL
2016	183 WAI YIP ST	SOLAR EMPIRE ENGINEERING CO LTD	M&E FIXING	PRIVATE/COMMERCIAL
2016	VENETIAN PH 3	KAM HON ENGINEERING & CONSTRUCTION	STEEL BEAM / BRACKET FIXING	MACAU
2017	XRL 810A	TRI-BUILD MASONRY & ENGINEERING LTD	INTERIOR FIXING	MTR
2017	SCL 1128	DRAGAGES-BOUYGUES J.V.	STEEL BEAM / BRACKET FIXING	MTR
2017	HKZMB PCB C1	GOLDFORD ENGINEERING (HK) LIMITED	STEEL BEAM / BRACKET FIXING	HIGHWAY
2017	HKZMB VEHICLE PLAZA & BLDGS C3	BUDDY ENGINEERING LIMITED	M&E FIXING	HIGHWAY
2017	TUNG CHUNG AREA 58	CR CONSTRUCTION COMPANY LIMITED	STEEL BEAM / BRACKET FIXING	HOUSING
2017	KAI TAK SITE 1G1 (B)	MING TAI CONSTRUCTION ENGINEERING	STEEL BEAM / BRACKET FIXING	HOUSING
2017	KAI TAK HK CHILDREN'S HOSPITAL	SIGN HOUSE COMPANY LIMITED	STEEL BEAM / BRACKET FIXING	ASD
2017	WEST KOWLOON XIQU CENTRE	MERRY CHINA ASIA LTD	STEEL BEAM / BRACKET FIXING	ASD
2017	TSIM SHA TSUI ART MUSEUM A&A	WING HING ENGINEERING INVESTMENT	M&E FIXING	ASD
2017	MURRAY BUILDING A&A	GAMMON ENGINEERING & CONSTRUCTION	M&E FIXING	PRIVATE/COMMERCIAL
2017	WAN CHAI DEVELOPMENT PHASE II	CHINA STATE-BUILD KING	STEEL BEAM / BRACKET FIXING	PRIVATE/COMMERCIAL
2017	39 TIT SHU STREET	WINDWARD METALLIC ENGINEERING	STEEL BEAM / BRACKET FIXING	PRIVATE/RESIDENTIAL
2017	NAM CHEONG STATION SHK RES	CHIT TAT ELECTRICAL ENGINEERING LTD	M&E FIXING	PRIVATE/RESIDENTIAL
2017	LISBOA PALACE	SUN TAT FIRE ENGINEERING COMPANY	STEEL BEAM / BRACKET FIXING	MACAU
2017	MGM COTAI	CHINA STATE (HONG KONG)	STEEL BEAM / BRACKET FIXING	MACAU
2018	XRL 810A	SAS INTERNATIONAL (HK) LIMITED	INTERIOR FIXING	MTR



Submission Folder

DATE	PROJECT NAME	CONTRACTOR	APPLICATION	PROJECT TYPE
2018	SCL 1123	MING TAI CONSTRUCTION ENGINEERING	STEEL BEAM / BRACKET FIXING	MTR
2018	SCL 1153B	PENTA-OCEAN - CHINA STATE	STEEL BEAM / BRACKET FIXING	MTR
2018	TMCLK NORTH CONNECT TUNNEL BLDGS	GAMMON CONSTRUCTION LIMITED	STEEL BEAM / BRACKET FIXING	HIGHWAY
2018	TKO-LAM TIN TUNNEL	CHUNG KONG MARINE ENGINEERING	STEEL BEAM / BRACKET FIXING	HIGHWAY
2018	TUNG CHUNG AREA 54	TYSAN FOUNDATION LIMITED	STEEL BEAM / BRACKET FIXING	HOUSING
2018	WEST KOWLOON CULTURAL DISTRICT M+	YAU LUEN ELECTRICAL ENGINEERING LTD	M&E FIXING	ASD
2018	WEST KOWLOON GOV. OFFICES	NGAI TO CONSTRUCTION LIMITED	INTERIOR FIXING	ASD
2018	HKIA P583 T1 ANNEX BLDG & CP4 EXT	LEUNG PUI	STEEL BEAM / BRACKET FIXING	AA
2018	HK SCIENCE PARK PH3 EXPANSION	HINRICH INTERNATIONAL LIMITED	STEEL BEAM / BRACKET FIXING	PRIVATE/COMMERCIAL
2018	TKO GLOBAL SWITCH PH3,4,5	MAN TUNG E & M ENGINEERING LIMITED	M&E FIXING	PRIVATE/COMMERCIAL
2018	TKO LOHAS PARK PH4	SUCCESS BASE ENGINEERING LIMITED	INTERIOR FIXING	PRIVATE/RESIDENTIAL
2018	MACAU THEME PARK	WAH SHING ENGINEERING (MACAU) LTD	STEEL BEAM / BRACKET FIXING	MACAU
2018	WYNN PALACE	CDI INTERNATIONAL LIMITED	STEEL BEAM / BRACKET FIXING	MACAU
2019	SCL 1112	WAI TAI ENGINEERING (H.K.) CO LTD	STEEL BEAM / BRACKET FIXING	MTR
2019	SCL 1128	RICHWELL CIVIL ENGINEERING LIMITED	STEEL BEAM / BRACKET FIXING	MTR
2019	TMCLK TUNNEL	DRAGAGES-BOUYGUES J.V.	STEEL BEAM / BRACKET FIXING	HIGHWAY
2019	LIANTANG BOUNDARY CP	ROXAS (FAR EAST) LIMITED	STEEL BEAM / BRACKET FIXING	CEDD
2019	PAK TIN ESTATE PH10	HO LEUNG ENGINEERING CO LTD	M&E FIXING	HOUSING
2019	WEST KOWLOON CULTURAL DISTRICT M+	LIGO ENGINEERING LIMITED	FAÇADE FIXING	ASD
2019	TSIM SHA TSUI ART MUSEUM A&A	WING HING ENGINEERING INVESTMENT EXCELTON BUILDING CONTRACTOR	STEEL BEAM / BRACKET FIXING	ASD
2019	KWAI CHUNG KCTL 495 - DATA CENTRE	STAR POWER ENGINEERING LIMITED	STEEL BEAM / BRACKET FIXING	PRIVATE/COMMERCIAL
2019	TAI PO- PAK SHEK KOK (214)	LINKA BUILDING MATERIALS CO LTD	STEEL BEAM / BRACKET FIXING	PRIVATE/RESIDENTIAL
2019	TKO LOHAS PARK PH10	JUNEFAR ENGINEERING CO. LIMITED	M&E FIXING	PRIVATE/RESIDENTIAL
2019	MACAU THEME PARK	CHINA CONSTRUCTION ENGINEERING	STEEL BEAM / BRACKET FIXING	MACAU
2019	LISBOA PALACE	SUN TAT FIRE ENGINEERING COMPANY	STEEL BEAM / BRACKET FIXING	MACAU