



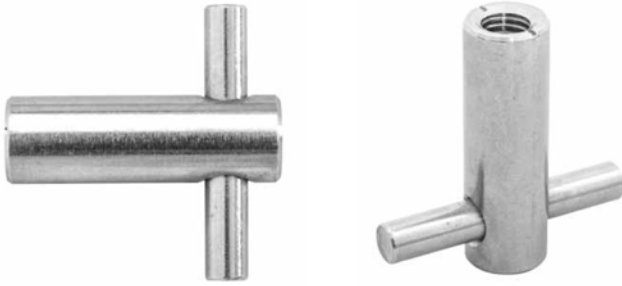
Hilti HCX Cast-in Socket Submission Folder

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Cast-in Socket HCX



BASE MATERIALS

- Concrete
- GRC

APPLICATIONS

- Façade fixing : Louver, GRC & Cladding works
- Precast panel support fixing
- Cooking bench fixing

ADVANTAGES

- Simple to locate on formwork accurately
- Shallow embedment depth required
- No stress impose on the concrete during pouring
- Clear marking for inspection

Technical data

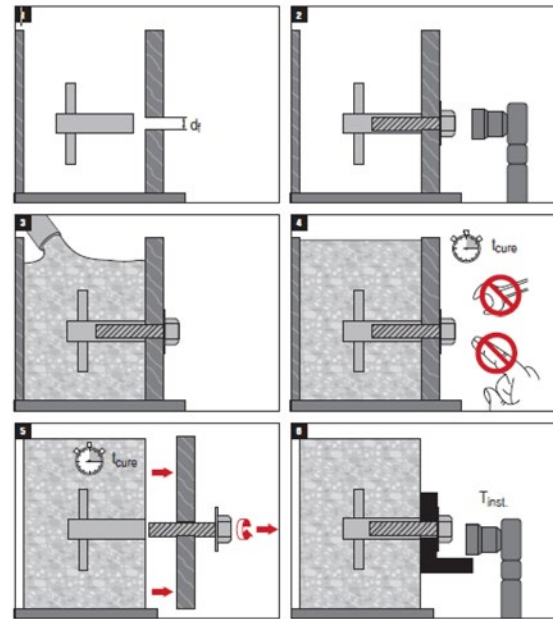
Head configuration	Inner thread
Type of fastening	Pre-fastening
HCX – Material Composition	Free cutting steel 1215
HCX – Material, Corrosion	Zinc plating 5µ on free cutting steel
HCX-R – Material Composition	Steel, A4 (SS316)

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

Model	Size	M8	M10	M12	M16
HCX (8.8)	Tensile Load, Nrec	3.0	4.2	5.8	6.9
	Shear Load, Vrec	4.3	7.1	9.7	12.3
HCX-R (A4-70)	Tensile Load, Nrec	3.0	4.2	5.8	6.9
	Shear Load, Vrec	4.3	6.8	9.9	13.7

Remarks:

- 1) All the data applies to no edge distance, spacing and other influences.
- 2) The loading performance varies depends on the steel grade of the screw or rod used in the HCX.
- 3) The bracket after HCX naming states the data for the steel grade of the screw or rod used.
- 4) For detail design method please refer to Fastening Technology Manual.



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

Ordering designation	Overall Anchor length	Outside Diameter	Allowable Screwing Depth	Effective Anchorage Depth	Max. tightening torque	Clearance hole	Sales pack quantity	Item number
HCX M8x40	40 mm	12 mm	10 / 21 mm	29 mm	8 Nm	9 mm	100 pc	2123086 ¹⁾
HCX M10x50	50 mm	16 mm	12 / 23 mm	36 mm	15 Nm	12 mm	50 pc	2123087 ¹⁾
HCX M12x60	60 mm	19 mm	14 / 26 mm	45 mm	25 Nm	14 mm	50 pc	2123088 ¹⁾
HCX M16x70	70 mm	22 mm	19 / 33 mm	50 mm	50 Nm	18 mm	25 pc	2123089
HCX-R M8x40	40 mm	12 mm	10 / 21 mm	29 mm	8 Nm	9 mm	100 pc	2123350 ¹⁾
HCX-R M10x50	50 mm	16 mm	12 / 23 mm	36 mm	15 Nm	12 mm	50 pc	2123351
HCXR M12x60	60 mm	19 mm	14 / 26 mm	45 mm	25 Nm	14 mm	50 pc	2123352 ¹⁾
HCX-R M16x70	70 mm	22 mm	19 / 33 mm	50 mm	50 Nm	18 mm	25 pc	2123353 ¹⁾

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



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東業德動測試顧問有限公司
 ETS-TESTCONSULT LIMITED

TEST REPORT

Tensile Load Test on Anchor Bolt

Customer : Hiti (Hong Kong) Ltd
 Address : 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip Street, Kwun Tong, Kowloon
 Project :
 Test Location : ETL Laboratory
 Anchor Type : HCS M8x40, Cast-in Socket
 Amb. Temperature : 20°C
 Report No. : FDA20611
 Test Date : 08-Mar-12
 Report Date : 26-Mar-12
 Page No. : 2 of 3
 Test Method : BS 5080 Part 1:1993 C17.1
 Test Procedure : TPF/003

Form C/FDR/07/Issue 1 (1/1) (06/06)

Load (kN)	Dial Gauge Reading (mm)				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.0	0.00	0.00	0.00	0.00	0.00
1.0	0.00	0.00	0.00	0.00	0.00
2.0	0.02	0.01	0.00	0.01	0.01
3.0	0.03	0.02	0.00	0.02	0.01
4.0	0.03	0.06	0.01	0.03	0.02
5.0	0.04	0.09	0.02	0.04	0.03
6.0	0.05	0.10	0.03	0.06	0.03
7.0	0.06	0.14	0.04	0.07	0.05
8.0	0.08	0.16	0.05	0.08	0.07
9.0	0.09	0.18	0.07	0.09	0.08
10.0	0.13	0.21	0.09	0.12	0.09
11.0	0.17	0.24	0.10	0.15	0.12
12.0	0.20	0.27	0.16	0.20	0.14
13.0	0.22	0.30	0.20	0.20	0.19
14.0	0.25	0.33	0.24	0.22	0.26
15.0	0.27	0.34	0.28	0.25	0.29
16.0	0.31	0.39	0.33	0.27	0.31
17.0	0.35	0.41	0.37	0.30	0.33
18.0	0.45	0.44	0.41	0.32	0.38
19.0	0.54	0.47	0.47	0.34	0.42
20.0	0.59	0.40	0.54	0.38	0.45
21.0	0.62	0.60	0.65	0.45	0.52
22.0	-	-	-	0.56	-
23.0	-	-	-	-	-
Failure Load (kN)	21.8	21.7	22.0	22.3	21.8
Failure Mode	F4	F4	F4	F4	F4
Average Failure Load (kN)	21.9				
Standard Deviation (kN)	0.2				

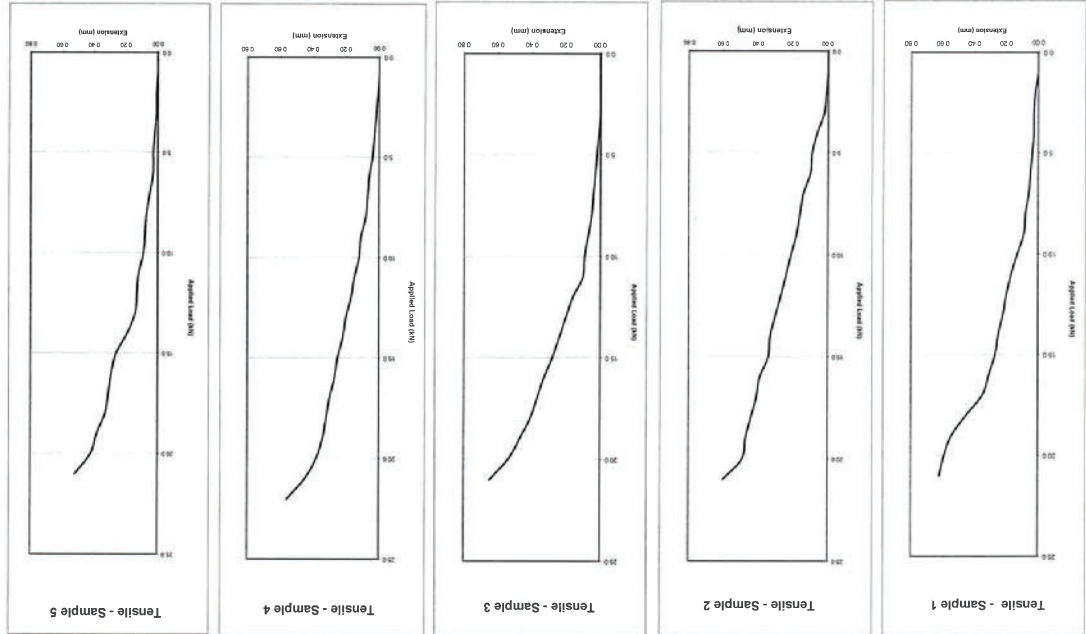
A) Test Apparatus
 Load Cell : Compression Load Cell C3000, 50kN (ET/9500201)
 Hydraulic Cylinder : Hydraulic Cylinder RCH1 151 (ET/60374)
 Digital Dial Gauge : Mitutoyo Digital Indicator (ET/61523)
 30 ± 3 MPa
 29-Feb-12
 B) Concrete Grade
 C) Anchor installed date
 D) Failure Modes
 F1 = No sign of failure in anchor and/or structural member
 F2 = Failure in structural member
 F3 = Failure of structural member in a shear cone
 F4 = Failure in structural member with crack radiates outward from anchor
 F5 = Other failure modes
 F6 = Failure in structural member with crack radiates outward from anchor
 F7 = Anchor Breaking
 E) Distance between reaction frame and centre of the fixing (mm)
 150
 F) Distance between the centre of fixing and free edge (mm)
 150
 G) Socket Length (mm)
 30

Tested By : YU, Shui Ming / CHAN, Ka Wai
 Approved Signatory : MONG, Seng Ming
 Checked By : PANG, Ting Pong / LIN, Meng Yang
 Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation. This report shall not be reproduced unless with prior written approval from this laboratory.



東業德動測試顧問有限公司
 ETS-TESTCONSULT LIMITED

HCS M8x40, Cast-in Socket





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 223 Wai Yip Street, Kwun Tong, Kowloon Web site : www.ets-testconsult.com
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Form CFB082/Issue 1 (1/1) (10/10)

TEST REPORT
Shear Load Test on Anchor Bolt

Information Provided by Customer

Customer : Hilti (Hong Kong) Ltd
 Address : 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip Street, Kwun Tong, Kowloon
 Project : -
 Test Location : ETL Laboratory
 Anchor Type : HCS M8x40, Cast-in Socket
 Amb.Temperature : 20°C

Lab Information

Report No : FDA20614
 Test Date : 08-Mar-12
 Report Date : 26-Mar-12
 Page No : 2 of 3
 Test Method : BS 5080 Part 2:1986 Cl 7.2

Load (kN)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.0	0.00	0.00	0.00	0.00	0.00
2.0	0.00	0.05	0.06	0.05	0.09
4.0	0.04	0.19	0.11	0.08	0.14
6.0	0.09	0.27	0.16	0.13	0.18
8.0	0.18	0.38	0.22	0.19	0.21
10.0	0.27	0.47	0.29	0.24	0.28
12.0	0.36	0.59	0.43	0.36	0.40
14.0	0.66	0.69	0.62	0.48	0.59
16.0	0.85	0.93	0.80	0.68	0.78
18.0	1.29	1.31	1.32	1.10	1.07
20.0	-	-	-	-	-
22.0	-	-	-	-	-
Failure Load (kN)	18.0	19.5	19.8	19.6	18.4
Failure Mode	F7	F7	F7	F7	F7
Average Failure Load (kN)	19.5				
Standard Deviation (kN)	0.3				

A) Test Apparatus : Load Cell : Comp. Load cell Thames, 50 kN (ET/93071101) SIN : 227193
 Load Cell Indicator : (ET/19222102) SIN : -
 Cylinder: Hydraulic Cylinder RCH 252 (ET/993413) SIN : C3869C
 Digital Dial Gauge : Mitutoyo Digital Indicator (ET/43019) SIN : O2354
 30 ± 3 MPa

B) Concrete Grade : 25-Feb-2012

C) Anchor installed date : 25-Feb-2012

D) Failure Modes : P = No sign of failure in anchor and/or structural member
 F2 = Failure in structural member
 F4 = Failure of structural member in a shear cone
 F6 = Failure in structural member with crack, radially outward from anchor
 F7 = Other failure mode(s) : Anchor Breaking

E) Distance between reaction frame and centre of the fixing (mm) : 300

F) Distance between the centre of fixing and free edge (mm) : 150

G) Socket Length (mm) : 40

F1 = Failure of anchor or its accessories
 F3 = Pull out of anchor
 F5 = Failure by continuous displacement or decreasing load

Tested By : CHOI, Chung Lung / CHAN, Hon Kwan
 Approved Signatory: MONG, Seng Ming

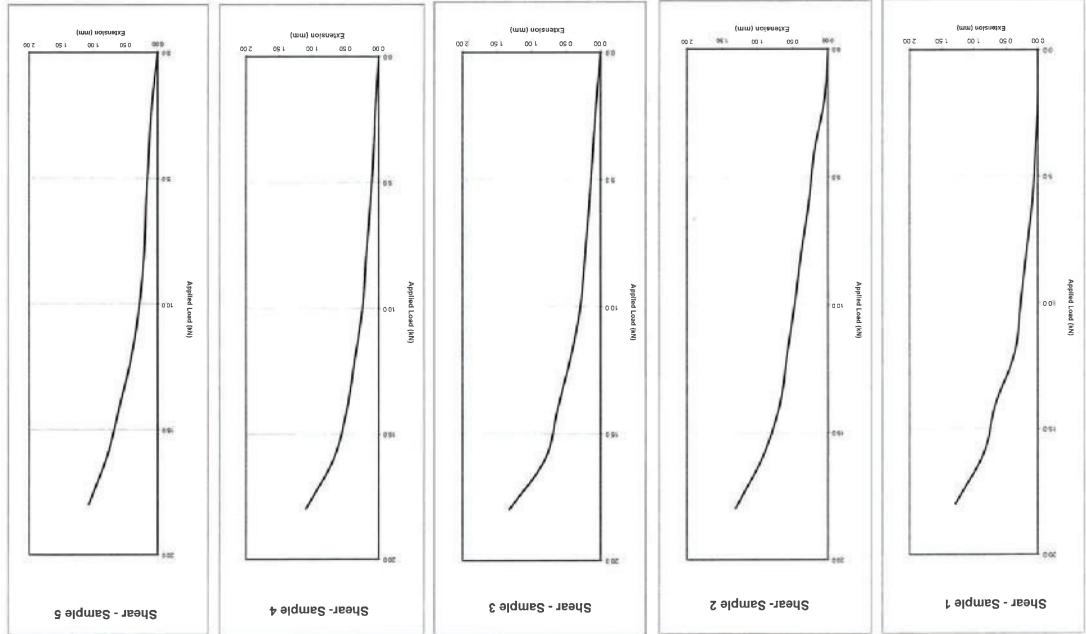
Checked By : PANG, Ting Pong/LIN, Meng Yang

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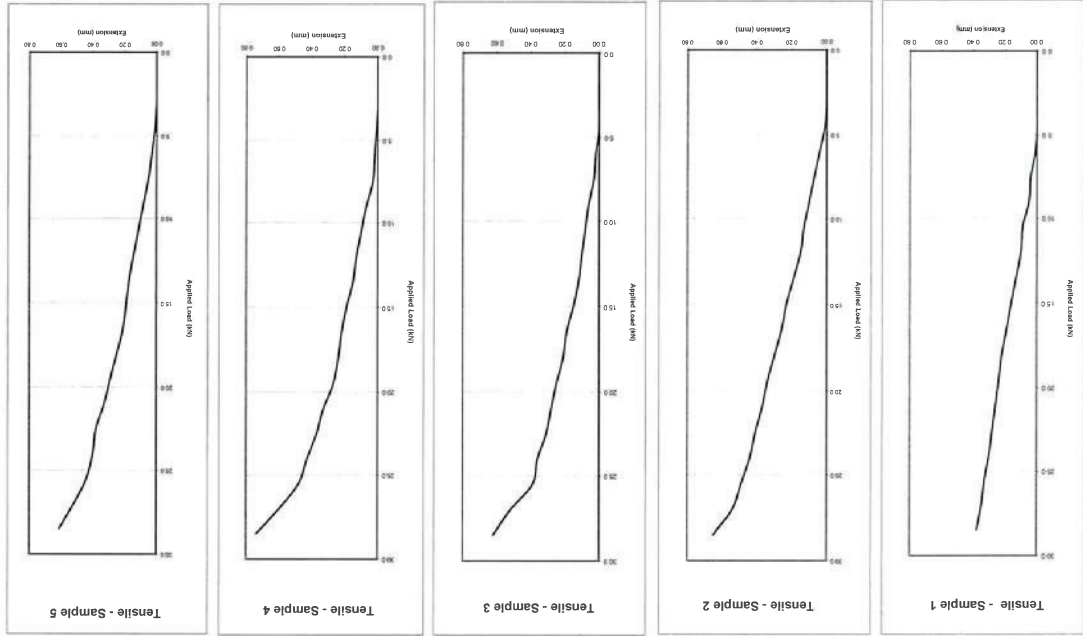


東業德测试顾问有限公司
 ETS-TESTCONSULT LIMITED

Report No: FDA20614



HCS M8x40, Cast-in Socket



HCS M10x50, Cast-in Socket



Form C/DR/77/Issue 1 (1/1) (06/06)

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TEST REPORT

Tensile Load Test on Anchor Bolt

Customer : Hiti (Hong Kong) Ltd
Address : 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip Street, Kwun Tong, Kowloon
Project :
Test Location : ETL Laboratory
Anchor Type : HCS M10x50, Cast-in Socket
Amb. Temperature : 20°C
Report No. : FDA20613
Test Date : 09-Mar-12
Report Date : 26-Mar-12
Page No. : 2 of 3
Test Method : BS 5080 Part 1:1983 cl 7.1
Test Procedure : TPF/003

Load (kN)	Dial Gauge Reading (mm)				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.0	0.00	0.00	0.00	0.00	0.00
1.5	0.00	0.00	0.00	0.00	0.00
3.0	0.00	0.00	0.00	0.00	0.00
4.5	0.00	0.01	0.00	0.01	0.01
6.0	0.01	0.04	0.02	0.02	0.03
7.5	0.04	0.07	0.03	0.03	0.05
9.0	0.05	0.10	0.06	0.07	0.08
10.5	0.09	0.13	0.08	0.10	0.11
12.0	0.10	0.15	0.10	0.13	0.14
13.5	0.13	0.19	0.12	0.15	0.17
15.0	0.16	0.23	0.15	0.19	0.21
16.5	0.19	0.26	0.19	0.22	0.25
18.0	0.22	0.30	0.21	0.24	0.29
19.5	0.24	0.34	0.25	0.28	0.33
21.0	0.26	0.37	0.28	0.33	0.38
22.5	0.28	0.41	0.31	0.37	0.40
24.0	0.30	0.44	0.36	0.43	0.44
25.5	0.33	0.49	0.39	0.44	0.52
27.0	0.35	0.54	0.52	0.60	0.61
28.5	0.38	0.61	0.62	0.74	0.61
30.0	-	-	-	-	-
31.5	-	-	-	-	-
Failure Load (kN)	29.3	29.1	29.1	28.9	29.5
Failure Mode	F4	F4	F4	F4	F4
Average Failure Load (kN)	29.2				
Standard Deviation (kN)	0.2				

A) Test Apparatus
Load Cell : Comp Load Cell YZC-219, 100kN (ET/9301/001)
Load Cell Indicator : (ET/9301/602)
Cylinder : Hydraulic Cylinder RCH 121 (ET/902/144)
Digital Dial Gauge : Mitutoyo Digital Indicator (ET/915/35)
30.4, 3 MPa
29-Feb-12

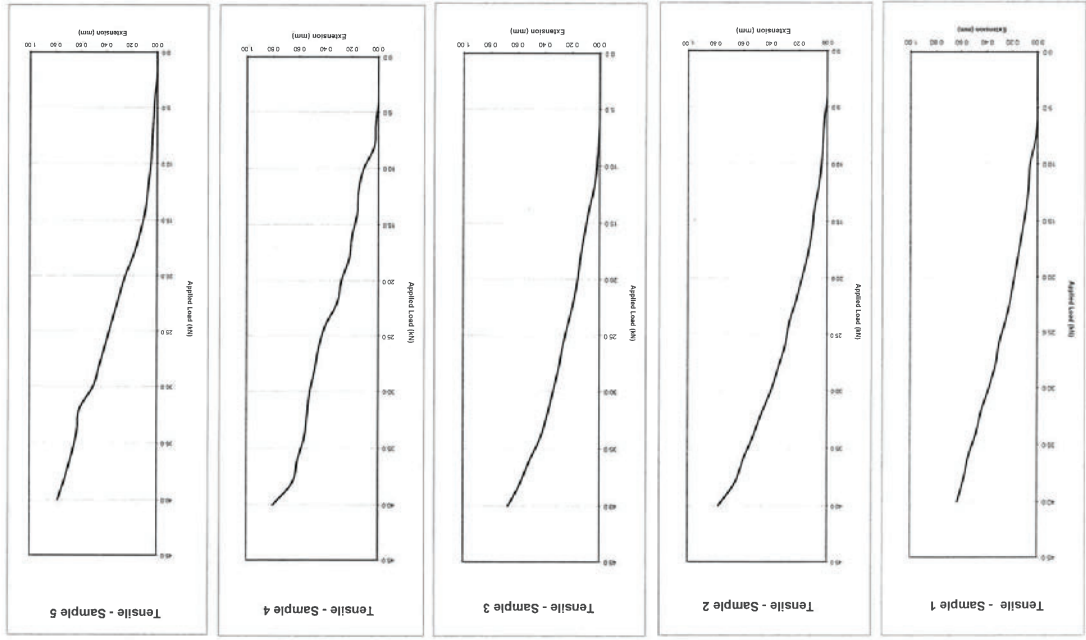
B) Concrete Grade
C) Anchor installed date
D) Failure Modes
E) Distance between reaction frame and centre of the fixing (mm)
F) Distance between the centre of fixing and free edge (mm)
G) Socket Length (mm)

175
175
40

P = No sign of failure in anchor and/or structural member
F1 = Failure of anchor or its accessories
F2 = Pull out of anchor
F3 = Failure of structural member in a shear cone
F4 = Failure in structural member with crack radiates outward from anchor
F5 = Failure by continuous displacement or decreasing load
F7 = Other failure mode(s) - Anchor Breaking

Tested By: YU, Shui Ming / CHAN, Ka Wai
Checked By: PANG, Ting Pong / LIN, Meng Yang
Approved Signatory: IMKNG, Seng Ming

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HCS M12x60, Cast-in Socket



Form: CTD/06/7/Issue 1 (1/1) (00/06)

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Web site : www.ets-testconsult.com

TEST REPORT

Tensile Load Test on Anchor Bolt

Customer : Hilti (Hong Kong) Ltd
Address : 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip Street, Kwun Tong, Kowloon
Project :
Test Location : ETL Laboratory
Anchor Type : HCS M12x60, Cast-in Socket
Amb. Temperature : 20°C
Report No. : FDA20612
Test Date : 08-Mar-12
Report Date : 26-Mar-12
Page No. : 2 of 3
Test Method : BS 5950 Part 1:1993 Cl 7.1
Test Procedure : TPF/003

Load (kN)	Dial Gauge Reading (mm)				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.0	0.00	0.00	0.00	0.00	0.00
2.0	0.00	0.00	0.00	0.00	0.00
4.0	0.00	0.00	0.00	0.00	0.00
6.0	0.00	0.00	0.00	0.00	0.00
8.0	0.02	0.03	0.01	0.03	0.04
10.0	0.06	0.04	0.02	0.11	0.05
12.0	0.07	0.06	0.04	0.15	0.07
14.0	0.09	0.09	0.08	0.16	0.09
16.0	0.12	0.11	0.11	0.20	0.13
18.0	0.15	0.14	0.14	0.22	0.18
20.0	0.18	0.18	0.16	0.28	0.25
22.0	0.21	0.22	0.19	0.31	0.30
24.0	0.25	0.27	0.23	0.40	0.35
26.0	0.30	0.30	0.27	0.45	0.40
28.0	0.33	0.35	0.30	0.48	0.45
30.0	0.38	0.40	0.34	0.52	0.50
32.0	0.44	0.47	0.38	0.54	0.61
34.0	0.46	0.53	0.43	0.56	0.63
36.0	0.54	0.60	0.51	0.61	0.67
38.0	0.58	0.66	0.58	0.65	0.72
40.0	0.63	0.78	0.67	0.80	0.78
42.0	-	-	-	-	-
44.0	-	-	-	-	-
Failure Load (kN)	41.5	40.9	41.1	41.3	41.0
Failure Mode	F4	F4	F4	F4	F4
Average Failure Load (kN)	41.2				
Standard Deviation (kN)	0.2				

A) Test Apparatus
Load Cell : Compression Load Cell C3000, 50kN (E179300201)
Load Cell Indicator : XT1500/232 (E179301202)
Cylinder : Hydraulic Cylinder RCH 121 (E1796314)
Digital Dial Gauge : Mitutoyo Digital Indicator (E1791535)
30 ± 3 MPa
29-Feb-12
P = No sign of failure in anchor and/or structural member
F1 = Failure of anchor or its accessories
F2 = Failure in structural member
F3 = Pull out of anchor
F4 = Failure of dissipator member in a shear cone
F5 = Failure by continuous displacement or decreasing load
F6 = Failure by continuous displacement or decreasing load
F7 = Other failure modes (Anchor Beaking)

B) Concrete Grade
C) Anchor Installed date
D) Failure Modes

E) Distance between reaction frame and centre of the fixing (mm)
200

F) Distance between the centre of fixing and free edge (mm)
200

G) Socket Length (mm)
50

Tested By : YU, Shui Ming / CHAN, Ka Wai
Approved Signatory : MONG, Seng Ming

Checked By : PANG, Ting Pong / LIN, Meng Yang

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TEST REPORT

Tensile Load Test on Anchor Bolt

Customer : Hilti (Hong Kong) Ltd Report No. : FDA90426
 Address : 17/F, Tower 6, China HK City, 33 Canton Road, TST Test Date : 08-Apr-09
 Project : - Report Date : 17-Apr-09
 Test Location : ETL's Laboratory Page No. : 2 of 3
 Anchor Type * : HCS, M16 x 70 Test Method : BS 5080:Part 1:1983 Cl 7.1
 Amb. Temperature : 24°C

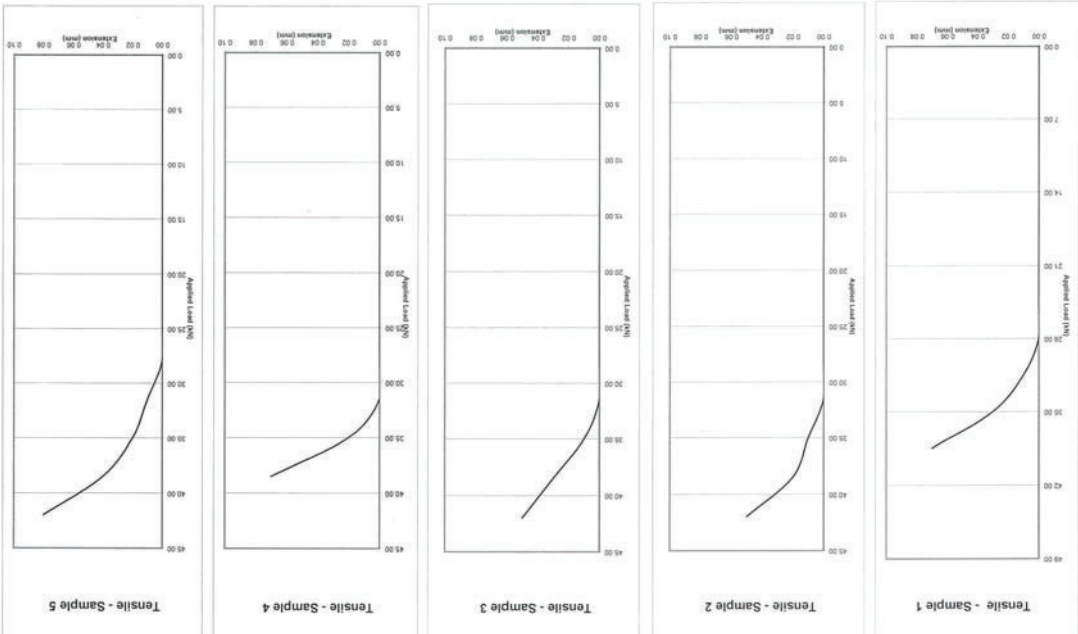
Load (kN)	Dial Gauge Reading (mm)				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.00	0.00	0.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	0.00	0.00
17.50	0.00	0.00	0.00	0.00	0.00
21.00	0.00	0.00	0.00	0.00	0.00
24.50	0.00	0.00	0.00	0.00	0.00
28.00	0.00	0.00	0.00	0.00	0.00
31.50	0.01	0.00	0.00	0.00	0.00
35.00	0.03	0.01	0.01	0.00	0.01
38.50	0.07	0.03	0.03	0.02	0.04
42.00	0.05	0.05	0.05	0.07	0.04
45.50	-	-	-	-	0.08
49.00	-	-	-	-	-
52.50	-	-	-	-	-
56.00	-	-	-	-	-
59.50	-	-	-	-	-
63.00	-	-	-	-	-
Failure Load (kN)	41.5	42.4	43.0	41.8	42.7
Failure Mode	F6	F6	F4	F6	F4
Average Failure Load (kN)	42.28				
Standard Deviation (kN)	0.62				

A) Test Apparatus
 Load Cell : Comp. Load cell C3000, 200kN (ET/930/0701) SN : 1000136752
 Load Cell Indicator : Load indicator AD813 (ET/930/0702) SN : -
 Cylinder : Hydraulic Cylinder RCH-202 (ET/930/13) SN : C3696C
 Digital Dial Gauge : ET/915/05
B) Concrete Grade : 30 ± 3 MPa
C) Anchor installed date : 08-Apr-09
D) Failure Modes
 P = No sign of failure in anchor and/or structural member
 F1 = Failure of anchor or its accessories
 F2 = Failure in structural member
 F3 = Pull out of anchor
 F4 = Failure of structural member in a shear cone
 F5 = Failure in structural member with crack radiates outward from anchor
 F6 = Failure by continuous displacement or decreasing load
 F7 = Other failure mode(s) / Anchor Breaking
E) Span width(mm) : 600
F) Edge distance(mm) : 300
G) Embedded Length(mm) : 70

* Information provided by customer
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ETS-TESTCONSULT LIMITED
 Report No. FDA90426



HCS, M16 x 70



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TEST REPORT

Shear Load Test on Anchor Bolt

Customer : Hilti (Hong Kong) Ltd Report No. : FDA90442
Address : 17/F, Tower 6, China HK City, 33 Canton Road, TST Test Date : 08-Apr-09
Project : - Test Report Date : 17-Apr-09
Test Location : ETL's Laboratory Page No. : 2 of 3
Anchor Type : HCS, M16 x 70 Test Method : BS 5080:Part 2:1986 Cl. 7.2
Amb. Temperature : 24°C

Load (kN)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.0	0.00	0.00	0.00	0.00	0.00
7.0	0.00	0.00	0.00	0.00	0.00
14.0	0.03	0.05	0.06	0.07	0.07
21.0	0.24	0.10	0.13	0.12	0.28
28.0	0.43	0.28	0.32	0.41	0.42
35.0	0.59	0.51	0.39	0.63	0.69
42.0	0.79	0.76	0.55	0.81	0.82
49.0	1.03	1.07	0.70	1.06	1.07
56.0	1.29	1.43	0.98	1.28	1.36
63.0	1.69	1.85	1.25	1.66	1.71
70.0	2.15	2.26	1.62	2.13	2.24
77.0	-	-	-	-	-
84.0	-	-	-	-	-
91.0	-	-	-	-	-
98.0	-	-	-	-	-
105.0	-	-	-	-	-
112.0	-	-	-	-	-
119.0	-	-	-	-	-
126.0	-	-	-	-	-
Failure Load (kN)	75.8	76.5	76.2	76.4	76.2
Failure Mode	F5	F5	F5	F5	F5
Average Failure Load (kN)	76.22				
Standard Deviation (kN)	0.27				

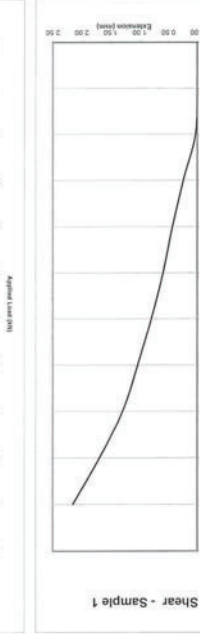
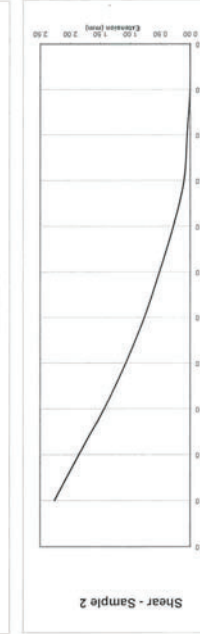
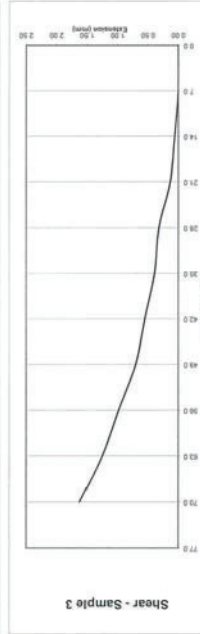
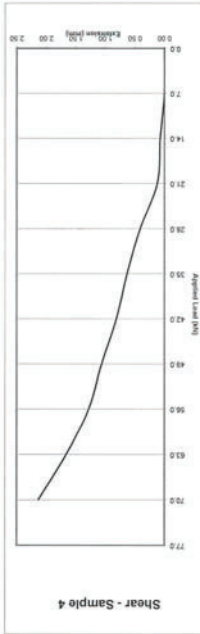
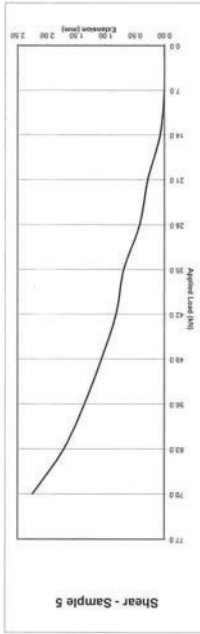
A) Test Apparatus	Load Cell : Comp. Load cell C3000, 200kN (ET/9300701) SIN : 1000136752 Load Cell Indicator : Load indicator AD813 (ET/9300702) SIN : - Cylinder : Hydraulic Cylinder RCH 202 (ET/903413) SIN : C3966C Digital Dial Gauge : ET/91535
B) Concrete Grade	30 ± 3 MPa
C) Anchor installed date	08-Apr-09
D) Failure Modes	P = No sign of failure in anchor and/or structural member F1 = Failure of anchor or its accessories F2 = Failure in structural member F3 = Pull out of anchor F4 = Failure of structural member in a shear cone F5 = Failure in structural member with crack radiates outward from anchor F6 = Failure by continuous displacement or decreasing load F7 = Other failure mode(s) / Anchor Breaking
E) Span width(mm)	600
F) Edge distance(mm)	300
G) Embedded Length(mm)	70

* Information provided by customer



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Report No: FDA90442



HCS, M16 x 70



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 Fax: 2695 3944 Web site: www.ets-testconsult.com



Form CPT0077/Issue 1 (1/1) (06/09)

TEST REPORT

Tensile Load Test on Anchor Bolt

Customer: Hilti (Hong Kong) Ltd
 Address: 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip Street, Kwun Tong, Kowloon
 Project: -
 Test Location: ETL Laboratory
 Anchor Type: HCS-R, M8
 Amb. Temperature: 24°C
 Report No.: FDA41912
 Test Date: 01-Dec-2014
 Report Date: 04-Dec-2014
 Page No.: 3 of 4
 Test Method: BS 5080:Part 1:1993 Cl 7.1
 Test Procedure: TPF1003

Load (kN)	Dial Gauge Reading (mm)				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.0	0.00	0.00	0.00	0.00	0.00
2.0	0.00	0.00	0.00	0.00	0.00
4.0	0.00	0.00	0.00	0.00	0.00
6.0	0.00	0.00	0.00	0.00	0.00
8.0	0.00	0.02	0.00	0.01	0.06
10.0	0.00	0.06	0.01	0.02	0.09
12.0	0.04	0.08	0.04	0.05	0.13
14.0	0.10	0.15	0.10	0.11	0.18
16.0	0.22	0.28	0.15	0.19	0.29
18.0	-	-	-	-	-
20.0	-	-	-	-	-
22.0	-	-	-	-	-
24.0	-	-	-	-	-
26.0	-	-	-	-	-
28.0	-	-	-	-	-
30.0	-	-	-	-	-
32.0	-	-	-	-	-
34.0	-	-	-	-	-
Failure Load (kN)	16.7	16.4	16.5	16.8	16.4
Failure Mode	F4	F4	F4	F4	F4
Average Failure Load (kN)	16.6				
Standard Deviation (kN)	0.2				

A) Test Apparatus	Load Cell: Comp. Load Cell GS429-5L, 50kN (ET/9302101) Load Cell Indicator: XCH35A-1-B (ET/9303402) Cylinder: RCH1211 (ET/930316) Digital Dial Gauge: Digital Indicator (ET/915552) 302000	S/N: 04 S/N: - S/N: B0502C S/N: 102889
B) Concrete Grade	25-Nov-2014	
C) Anchor installed date		
D) Failure Modes	P = No sign of failure in anchor and/or structural member F2 = Failure in structural member F4 = Failure of structural member in a shear cone F6 = Failure in structural member with crack radiates outward from anchor F7 = Other failure mode(s) / Anchor Breaking	F1 = Failure of anchor or its accessories F3 = Pull out of anchor F5 = Failure by continuous displacement or decreasing load
E) Min. distance between reaction frame and centre of the fixing (mm)	96	
F) Min. distance between the centre of fixing and free edge (mm)	144	
G) Anchor Length, l_f (mm)	40	
H) Anchor Diameter, d_s (mm)	12	

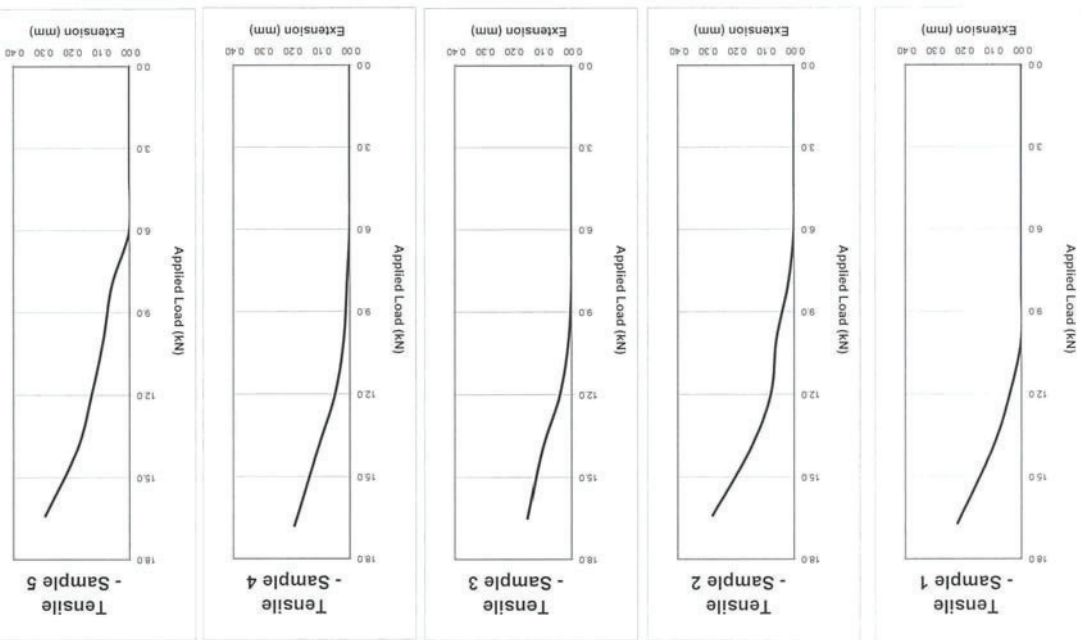
Tested By: SO, Hin Ting/CHOI, Chung Lung
 Checked By: SO (Assistant Engineer)
 Approved Signatory: MONG, Seng Ming

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Form CPT0077/Issue 1 (1/1) (06/09)



HCS-R, M8



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Form CFB0833 Issue 1 (1/11/10/08)

TEST REPORT
Shear Load Test on Anchor Bolt

Information Provided by Customer

Customer : Hili (Hong Kong) Ltd
Address : 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip Street, Kwun Tong, Kowloon
Project : -
Test Location : ETL Laboratory
Anchor Type : HCS-R, M8
Amb. Temperature : 24°C

Lab Information

Report No. : FDA41900
Test Date : 01-Dec-2014
Report Date : 02-Dec-2014
Page No. : 3 of 4
Test Method : BS 5880-Part 2:1986 Cl 7.2

Load (kN)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.0	0.00	0.00	0.00	0.00	0.00
2.0	0.04	0.03	0.00	0.00	0.01
4.0	0.09	0.10	0.04	0.03	0.11
6.0	0.12	0.13	0.09	0.06	0.14
8.0	0.19	0.17	0.12	0.10	0.21
10.0	0.30	0.25	0.16	0.14	0.33
12.0	0.40	0.35	0.26	0.30	0.44
14.0	0.56	0.53	0.39	0.42	0.59
16.0	0.72	1.13	0.67	0.70	0.78
18.0	1.05	1.59	1.24	1.25	1.11
20.0	1.76	2.27	1.91	1.97	1.80
22.0	-	-	-	-	-
24.0	-	-	-	-	-
26.0	-	-	-	-	-
28.0	-	-	-	-	-
30.0	-	-	-	-	-
32.0	-	-	-	-	-
34.0	-	-	-	-	-
Failure Load (kN)	F7	F7	F7	F7	F7
Average Failure Load (kN)	21.2	20.9	21.3	21.6	21.5
Standard Deviation (kN)	-	-	0.3	-	-

A) Test Apparatus : Load Cell : Compression Load Cell CWFK-10t, 100kN
Load Cell Indicator : XG315A1-a
Cylinder : Hydraulic Cylinder RICH 121
Digital Dial Gauge : Digital Indicator
3020D
24-Nov-2014
P = No sign of failure in anchor and/or structural member
F1 = Failure of anchor or its accessories
F2 = Failure in structural member
F3 = Pull out of anchor
F4 = Failure of structural member in a shear cone
F5 = Failure of structural member with crack radiates outward from anchor
F6 = Failure of structural member with crack radiates outward from anchor
F7 = Other failure mode(s) ; Anchor Breaking

B) Concrete Grade : -
C) Anchor installed date : -
D) Failure Modes : -
E) Min. distance between reaction frame and centre of the fixing (mm) : 96
F) Min. distance between the centre of fixing and free edge (mm) : 96
G) Anchor Length, l_f (mm) : 40
H) Anchor Diameter, d_n (mm) : 12

Load Cell : (E179002101) SN : 04
(E1790034002) SN : -
(E179002115) SN : -
(E17915153) SN : 1301344

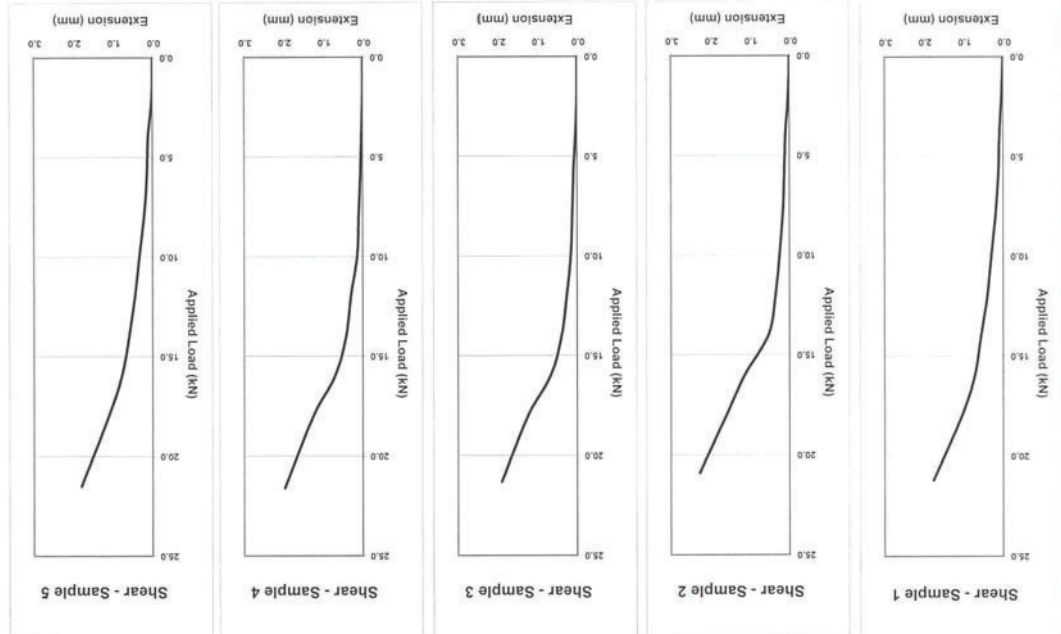
F1 = Failure of anchor or its accessories
F2 = Pull out of anchor
F3 = Failure by continuous displacement or decreasing load

Tested By : KAN, Chi Wai / CHOI, Chung Lung
Checked By : So (Assistant Engineer)
Approved Signatory : MONG, Seng Ming

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HCS-R, M8



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Form CPT077/Issue 1 (1/1) (06/08)

TEST REPORT

Tensile Load Test on Anchor Bolt

Customer : Hilti (Hong Kong) Ltd
 Address : 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip Street, Kwun Tong, Kowloon
 Project : --
 Test Location : ETL Laboratory
 Anchor Type : HCS-R, M10
 Amb Temperature : 24°C
 Report No. : FDA41913
 Test Date : 01-Dec-2014
 Report Date : 04-Dec-2014
 Page No. : 3 of 4
 Test Method : BS 5080:Part 1:1993 Cl 7.1
 Test Procedure : TPF003

Load (kN)	Dial Gauge Reading (mm)				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.0	0.00	0.00	0.00	0.00	0.00
2.5	0.00	0.00	0.00	0.00	0.00
5.0	0.00	0.00	0.00	0.00	0.00
7.5	0.00	0.00	0.00	0.00	0.00
10.0	0.00	0.00	0.00	0.00	0.00
12.5	0.00	0.00	0.00	0.01	0.00
15.0	0.00	0.03	0.02	0.02	0.03
17.5	0.01	0.09	0.06	0.05	0.07
20.0	0.10	0.15	0.14	0.09	0.12
22.5	0.20	0.24	0.22	0.17	0.22
25.0	-	-	-	-	-
27.5	-	-	-	-	-
30.0	-	-	-	-	-
32.5	-	-	-	-	-
35.0	-	-	-	-	-
37.5	-	-	-	-	-
40.0	-	-	-	-	-
42.5	-	-	-	-	-
Failure Load (kN)	23.8	23.4	23.3	24.0	23.7
Failure Mode	F4	F4	F4	F4	F4
Average Failure Load (kN)	23.6				
Standard Deviation (kN)	0.3				

A) Test Apparatus
 Load Cell : Comp. Load Cell GS429-5L, 50kN (ET/930721/01)
 Load Cell Indicator : XIC15A 1-8 (ET/930344/02)
 Cylinder RCH1211 (ET/90318)
 Digital Dial Gauge : Digital Indicator (ET/915452)
 30/200
 25-Nov-2014
 C) Anchor installed date
 D) Failure Modes
 P = No sign of failure in anchor and/or structural member
 F2 = Failure in structural member
 F4 = Failure of structural member in a shear cone
 F6 = Failure in structural member with crack radiates outward from anchor
 F7 = Other failure mode(s) / Anchor Breaking
 E) Min. distance between reaction frame and centre of the fixing (mm) 128
 F) Min. distance between the centre of fixing and free edge (mm) 192
 G) Anchor Length, l (mm) 50
 H) Anchor Diameter, d (mm) 16

Tested By : SO, Hin Ting/CHOI, Chung Lung
 Checked By : SO (Assistant Engineer)
 Approved Signatory : MOKNG, Seng Ming

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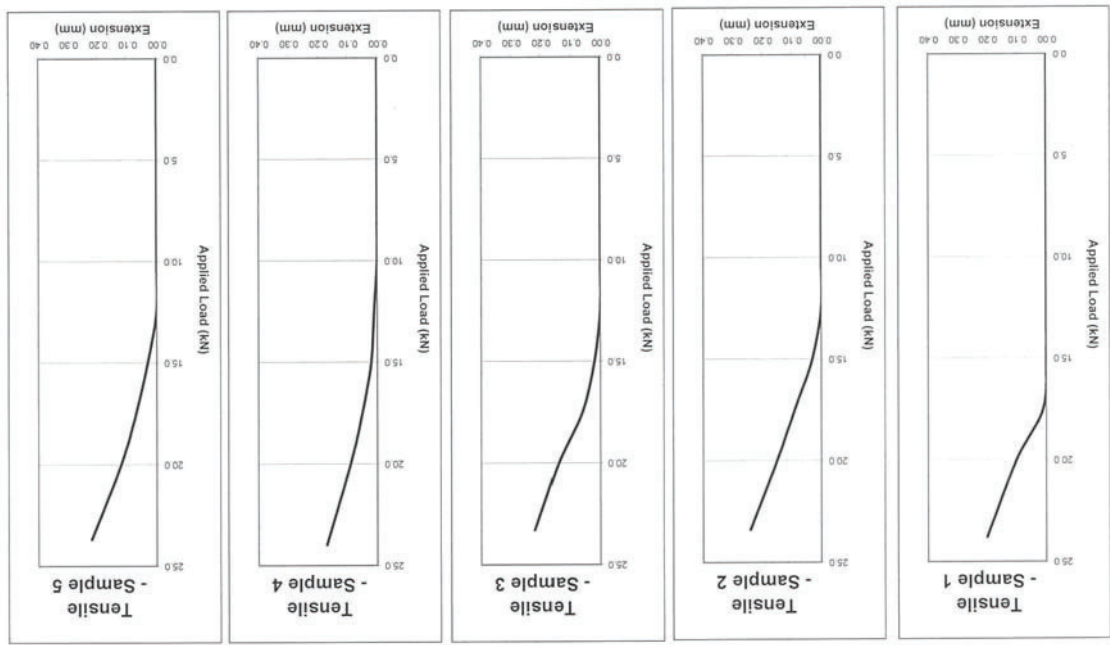


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Report No. FDA41913

Page 4 of 4
 - END OF REPORT -

Report Issue Date: 04-Dec-2014



HCS-R, M10



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 Fax : 2895 3944 Web site : www.ets-testconsult.com



Form ETL007/Issue 1 (1/1) (6/06)

TEST REPORT

Tensile Load Test on Anchor Bolt

Customer : Hilli (Hong Kong) Ltd
 Address : 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip Street, Kwun Tong, Kowloon
 Project : -
 Test Location : ETL Laboratory
 Anchor Type : HCS-R, M12
 Amb Temperature : 24°C
 Report No. : FDA41914
 Test Date : 02-Dec-2014
 Report Date : 04-Dec-2014
 Page No. : 3 of 4
 Test Method : BS 5090:Part 1:1993 Cl 7.1
 Test Procedure : TPF003

Load (kN)	Dial Gauge Reading (mm)				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.0	0.00	0.00	0.00	0.00	0.00
3.0	0.00	0.00	0.00	0.00	0.00
6.0	0.00	0.00	0.00	0.00	0.00
9.0	0.00	0.00	0.00	0.00	0.00
12.0	0.01	0.00	0.00	0.00	0.01
15.0	0.02	0.04	0.02	0.01	0.03
18.0	0.05	0.07	0.04	0.04	0.05
21.0	0.12	0.12	0.06	0.06	0.09
24.0	0.21	0.18	0.18	0.10	0.15
27.0	0.28	0.29	0.40	0.17	0.28
30.0	0.53	0.50	0.66	0.32	0.45
33.0	-	-	-	-	-
36.0	-	-	-	-	-
39.0	-	-	-	-	-
42.0	-	-	-	-	-
45.0	-	-	-	-	-
48.0	-	-	-	-	-
51.0	-	-	-	-	-
Failure Load (kN)	31.4	31.6	31.7	32.0	31.4
Failure Mode	F4	F4	F4	F4	F4
Average Failure Load (kN)	31.6				
Standard Deviation (kN)	0.2				

A) Test Apparatus
 Load Cell : Comp. Load Cell GS425-5k, 50kN (ET9302101)
 Load Cell Indicator : X335A1-1E (ET9303402)
 Cylinder : RCH1211 (ET930316)
 Digital Dial Gauge - Digital Indicator (ET915562)
 302000
 25-Nov-2014
 P = No sign of failure in anchor and/or structural member
 F1 = Failure of anchor or its accessories
 F2 = Failure in structural member
 F3 = Failure of structural member in a shear cone
 F4 = Failure in structural member with crack radiates outward from anchor
 F5 = Failure by continuous displacement or decreasing load
 F7 = Other failure mode(s) / Anchor breaking

B) Concrete Grade
 C) Anchor installed date
 D) Failure Modes

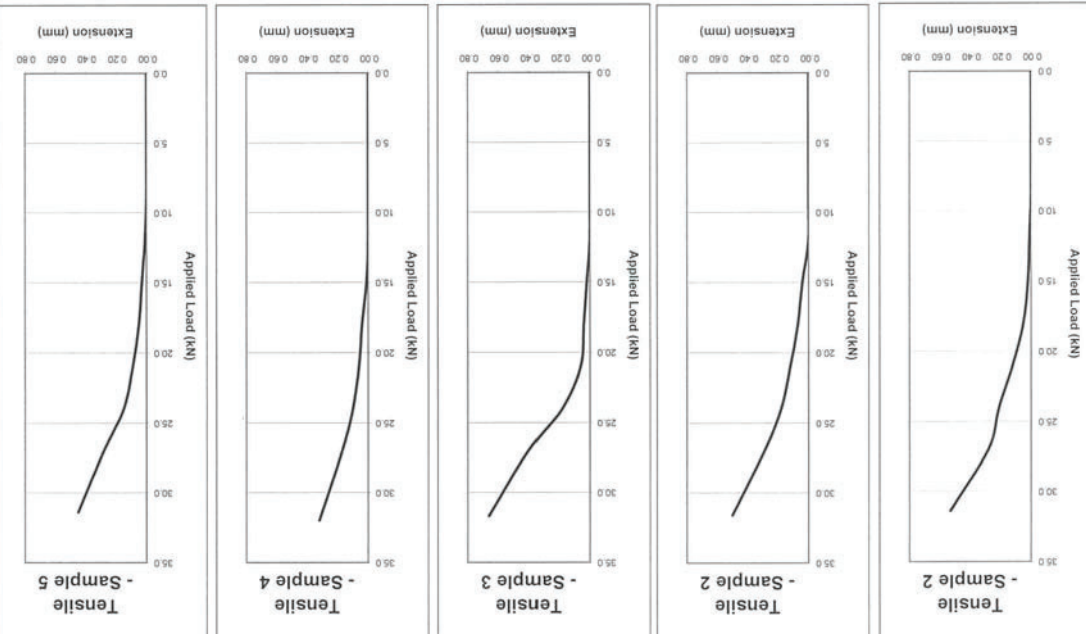
E) Min. distance between reaction frame and centre of the fixing (mm) : 152
 F) Min. distance between the centre of fixing and free edge (mm) : 228
 G) Anchor Length, ℓ (mm) : 60
 H) Anchor Diameter, d, (mm) : 19

Tested By : SO, Hin Ting/CHOI, Chung Lung
 Checked By : (Assistant Engineer)
 Approved Signatory : MONG, Seng Ming

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 Report No. FDA41914



HCS-R, M12



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Fax: 2695 3944 Web site: www.ets-testconsult.com

TEST REPORT
Shear Load Test on Anchor Bolt

Information Provided by Customer

Customer: Hilti (Hong Kong) Ltd
Address: 701-704, 7/F, Tower A, Manulife Financial Centre, 223 Wai Yip Street, Kwun Tong, Kowloon
Project: -
Test Location: ETL Laboratory
Anchor Type: HCS-R, M12
Amb. Temperature: 24°C

Lab Information

Report No.: FDA41902
Test Date: 01-Dec-2014
Report Date: 02-Dec-2014
Page No.: 3 of 4
Test Method: BS 5080-Part 2:1986 Cl 7.2



Form CCF00803/Issue 1 (1/11/10) (9/0)

Load (kN)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.0	0.00	0.00	0.00	0.00	0.00
3.0	0.02	0.01	0.00	0.00	0.00
6.0	0.15	0.03	0.02	0.00	0.00
9.0	0.25	0.06	0.06	0.04	0.03
12.0	0.36	0.09	0.10	0.05	0.06
15.0	0.56	0.12	0.15	0.08	0.08
18.0	0.79	0.15	0.25	0.11	0.18
21.0	1.03	0.22	0.32	0.14	0.26
24.0	1.21	0.32	0.40	0.20	0.30
27.0	1.30	0.44	0.49	0.24	0.39
30.0	1.42	0.58	0.58	0.34	0.41
33.0	1.58	0.68	0.66	0.62	0.56
36.0	1.90	0.86	0.83	0.69	1.69
39.0	2.08	1.15	1.05	0.80	2.02
42.0	2.88	1.79	1.52	1.27	2.40
45.0	-	-	-	-	-
48.0	-	-	-	-	-
51.0	-	-	-	-	-
Failure Load (kN)	F7	43.3	43.5	44.1	44.3
Failure Mode	F7	F7	F7	F7	F7
Average Failure Load (kN)					
Standard Deviation (kN)					0.4

A) Test Apparatus
Load Cell: Compression Load Cell CWFK-10k, 100kN
Load Cell Indicator: XN315A1-8
Cylinder: Hydraulic Cylinder RCH121
Digital Dial Gauge: Digital Indicator
30/200
24-Nov-2014
P = No sign of failure in anchor and/or structural member
F1 = Failure of anchor or its accessories
F2 = Failure in structural member
F3 = Failure of structural member in a shear cone
F4 = Failure in structural member with crack radiates outward from anchor
F5 = Failure in structural member with crack radiates outward from anchor
F6 = Other failure mode(s): Anchor Breaking
F7 = Failure of anchor or its accessories
F8 = Pull out of anchor
F9 = Failure by continuous displacement or decreasing load

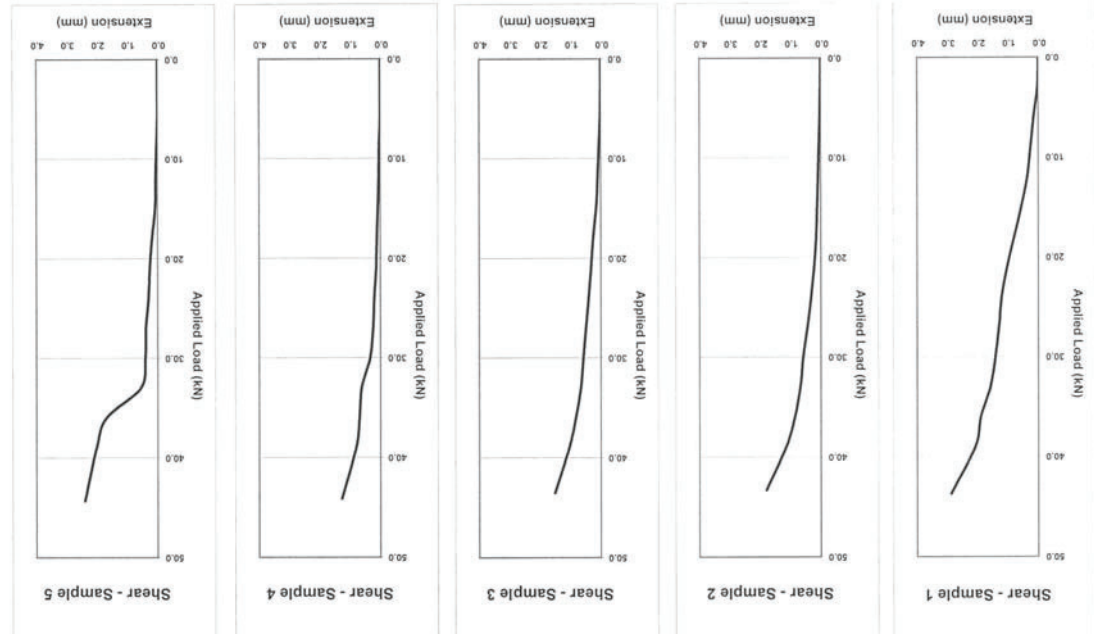
E) Min. distance between reaction frame and centre of the fixing (mm) 152
F) Min. distance between the centre of fixing and free edge (mm) 152
G) Anchor Length, l_f (mm) 60
H) Anchor Diameter, d_n (mm) 19

Tested By: KAN, Chi Wai / CHOI, Chung Lung
Checked By: (Assistant Engineer)
Approved Signatory: MONG, Seng Ming

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HCS-R, M12



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 Tel : 2695 8318 Email : etl@ets-testconsult.com
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TEST REPORT

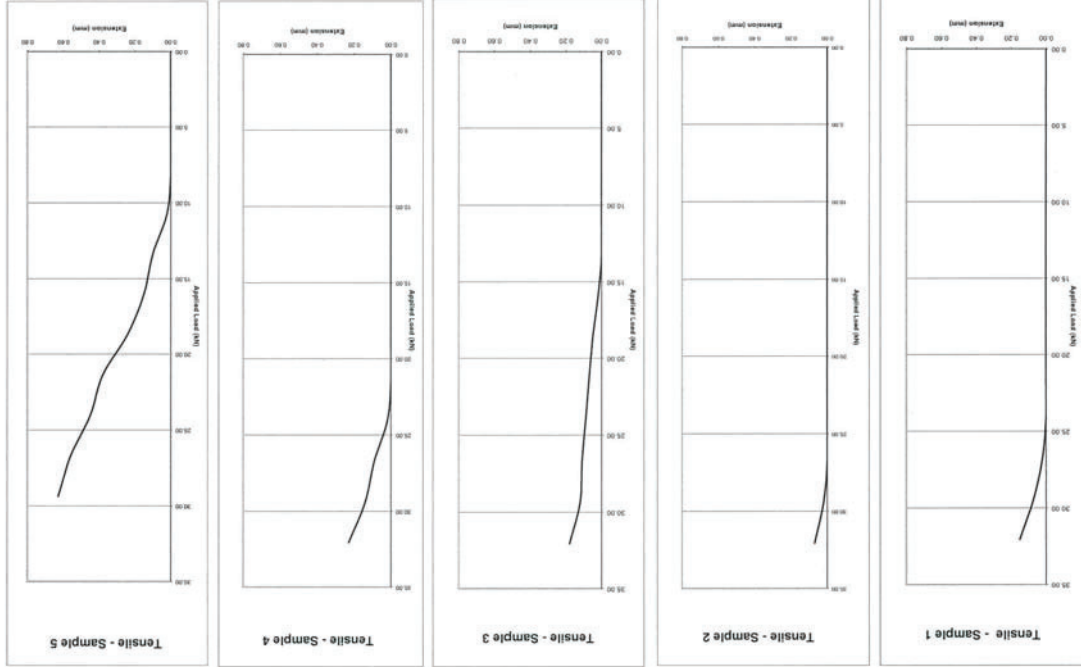
Tensile Load Test on Anchor Bolt

Client Hilti (Hong Kong) Ltd Report No. : FDA60276
 Address 17/F, Tower 6, China HK City, 33 Canton Road, TST Test Date : 09-Mar-06
 Project - Report Date : 14-Mar-06
 Test Location ETL's Laboratory Page No. : 2 of 3
 Anchor Type HCS-R, M16 x 70 (Stainless Steel) Test Method : BS 5080:Part 1:1993 Cl 7.1
 Amb. Temperature 22°C

Load (kN)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.00	0.00	0.00	0.00	0.00	0.00
2.67	0.00	0.00	0.00	0.00	0.00
5.34	0.00	0.00	0.00	0.00	0.00
8.01	0.00	0.00	0.00	0.00	0.00
10.68	0.00	0.00	0.00	0.00	0.02
13.35	0.00	0.00	0.00	0.00	0.10
16.02	0.00	0.00	0.02	0.00	0.15
18.69	0.00	0.00	0.05	0.00	0.24
21.36	0.00	0.00	0.07	0.00	0.38
24.03	0.00	0.00	0.09	0.02	0.45
26.70	0.02	0.00	0.11	0.09	0.56
29.37	0.07	0.02	0.12	0.14	0.63
32.04	0.15	0.07	0.18	0.23	-
34.71	-	-	-	-	-
37.38	-	-	-	-	-
40.05	-	-	-	-	-
42.72	-	-	-	-	-
45.39	-	-	-	-	-
48.06	-	-	-	-	-
Failure Load (kN)	34.2	34.0	33.8	34.0	31.6
Failure Mode	F4	F4	F4	F4	F4
Average Failure Load (kN)	33.52				
Standard Deviation (kN)	1.08				

A) Test Apparatus	Load Cell : Maywood C3000 (ET1930/07/01) (200kN) Load Cell Indicator : AD813 (ET1930/07/02) Cylinder : Enerpac RCH302 (ET1903/14) Digital Dial Gauge : ET1430/02	S/N : 100136752 S/N : - S/N : -
B) Concrete Grade	30 ± 3 MPa	
C) Anchor installed date	-	
D) Failure Modes	P = No sign of failure in anchor and/or structure member F2 = Failure of structural member F4 = Failure of structural member in a shear cone F6 = Failure in structural member with crack indicates outward from anchor F7 = Other failure mode(s) : Anchor Breaking	
E) Span width(mm)	600	
F) Edge distance(mm)	300	
G) Embedded Length(mm)	70	

HCS-R, M16 x 70 (Stainless Steel)

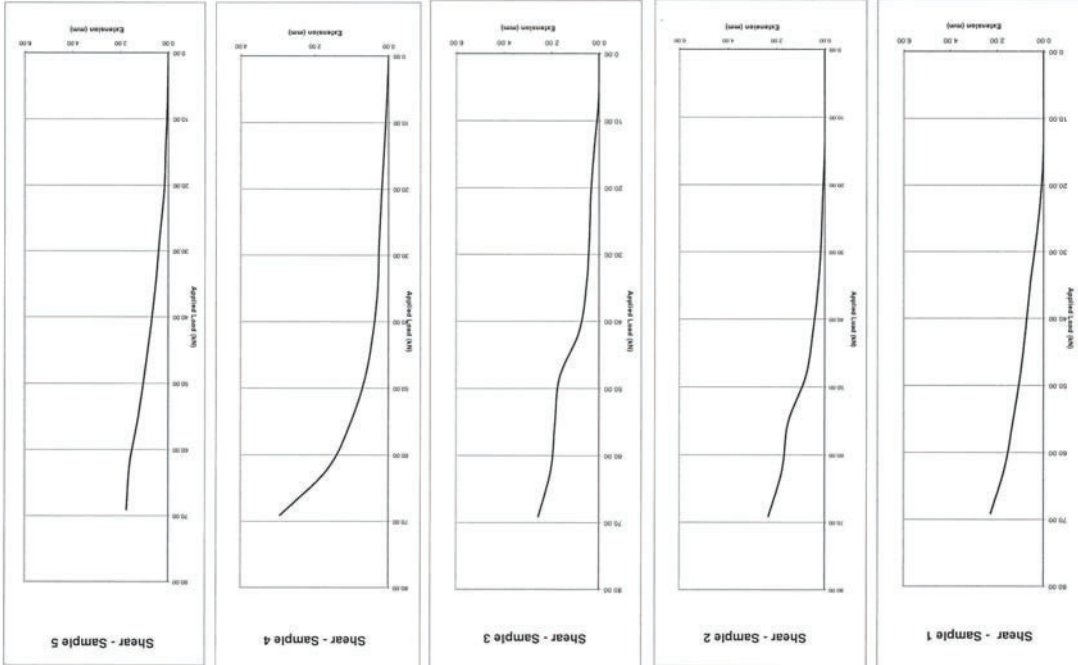


東業德测试顾问有限公司
ETS-TESTCONSULT LIMITED

Report No: FDA60276

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Report Issued Date: 14 Mar 2006



HCS-R, M16 x 70 (Stainless Steel)

東業德勤測試顧問有限公司
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Tel.: 2695 8318
E-mail: etl@ets-testconsult.com
Web site: www.ets-testconsult.com

TEST REPORT

Shear Load Test on Anchor Bolt

Client: Hilti (Hong Kong) Ltd
Address: 17/F, Tower 6, China HK City, 33 Canton Road, TST
Project: ETL's Laboratory
Test Location: HCS-R, M16 x 70 (Stainless Steel)
Anchor Type: 22°C
Amb. Temperature: 22°C
Report No.: FDA60277
Test Date: 09-Mar-06
Report Date: 14-Mar-06
Page No.: 2 of 3
Test Method: BS 5980:Part 2:1986 Cl.7.2

Load (kN)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
0.00	0.00	0.00	0.00	0.00	0.00
6.91	0.00	0.00	0.02	0.05	0.03
13.82	0.00	0.00	0.20	0.12	0.10
20.73	0.10	0.08	0.34	0.19	0.17
27.64	0.30	0.14	0.41	0.25	0.35
34.55	0.56	0.26	0.53	0.29	0.51
41.46	0.76	0.47	0.83	0.41	0.73
48.37	0.99	0.78	1.66	0.63	0.98
55.28	1.30	1.51	1.85	1.03	1.26
62.19	1.66	1.75	2.03	1.66	1.61
69.10	2.27	2.32	2.56	2.94	1.75
76.01	-	-	-	-	-
82.92	-	-	-	-	-
89.83	-	-	-	-	-
96.74	-	-	-	-	-
103.65	-	-	-	-	-
110.56	-	-	-	-	-
117.47	-	-	-	-	-
Failure Load (kN)	69.6	69.5	69.8	69.9	69.7
Failure Mode	F7	F7	F7	F7	F7
Average Failure Load (kN)	69.70				
Standard Deviation (kN)	0.16				

A) Test Apparatus	Load Cell: Maywood C3000 (ET/930/06/01) (500kN) Load Cell Indicator: AD813 (ET/930/06/02) Cylinder: Enerpac RCH302 (ET/903/07) Digital Dial Gauge: ET/430/02	S/N: 174529 S/N: - S/N: C3691C
B) Concrete Grade	30 ± 3 MPa	
C) Anchor installed date	-	
D) Failure Modes	P = No sign of failure in anchor and/or structural member F2 = Failure in structural member F4 = Failure of structural member in a shear cone F6 = Failure in structural member with crack radiates outward from anchor F7 = Other failure mode(s): Anchor Breaking	
E) Span width(mm)	400	
F) Edge distance(mm)	200	
G) Embedded Length(mm)	70	

Attn. : To whom it may concern

Date : 14 Sep 2023
Ref. : 074/FP/DY/23

Subject : Country of Origin - Hilti HCX Cast-in Socket

Dear Sir / Madam,

Enclosed please find the information of Hilti HCX Cast-in Socket.

Brand Name : Hilti

Manufacturer : Hilti Corporation

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

Manufacturer Contact Person : Dennis Yeung

Supplier : Hilti (Hong Kong) Ltd

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

Supplier Contact Person : Dennis Yeung (+852 9723 4621)

Country of Origin : China

Should you have further questions, please do not hesitate to contact our Technical Representatives, Customer Service Hotline at 8228-8118, or email us at hksales@hilti.com.

Yours Faithfully,



Dennis Yeung
Head of Product Leadership Strategy, F&P

Ref. no : 072/AM/DY/23
Date : 13 September 2023

Subject : Confirmation of name change of HCS/ HCS-R to HCX/ HCX-R cast-in sockets

To whom it may concern,

We confirm that the HCS/ HCS-R cast-in sockets are the same product as the HCX/ HCX-R cast-in sockets. The product went through an internal name change in our systems. The mechanical properties of the product or manufacturing process have not changed.

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

Yours faithfully,



Dennis Yeung
Head of Product Leadership Strategy, F&P
Hilti (Hong Kong) Ltd.

