

Hilti HIT-RE100 Epoxy Anchor

(Post-Installed Rebar) Submission Folder

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Injectable mortar Hilti HIT-RE 100 NEW



BASE MATERIALS

Concrete (non-cracked)

APPLICATIONS

- Structural connections with post-installed rebar (e.g. extension/ connection to walls, slabs, stairs, columns, foundations, etc.)
- Anchoring structural steel connections (e.g. steel columns, beams, etc.)
- Suitable for underwater applications in hammer-drilled holes

ADVANTAGES

- European Technical Approval covering automatic cleaning of holes drilled using TE-CD or TE-YD drill bits and Hilti vacuum cleaners
- Especially suitable for large-diameter elements and/or deep embedment depths
- Virtually odourless, hence pleasant to work with

Technical data

Material composition	Epoxy Adhesive
Base material condition	Dry, submerged, water-filled, wet
Tested/approved for diamond drilling	Yes
Seismic	No
Compatible cartridge holder	CB (Black)
Additional product information	Always wear eye protection and aloves while handling

Curing time

Temperature in the base material T [°C]	Maximum working time t _{work} [min]	Minimum curing time t _{cure} [h]
-5 to 9	120	72
10 to 14	90	48
15 to 19	30	24
20 to 24	25	12
25 to 29	20	10
30 to 39	12	8
40	12	4





Approvals

ETA



ETA-15/0882 for HIT-RE 100 injection mortar for anchoring applications (ETAG 001-05, Option 7)

ETA-15/0883 for HIT-RE 100 injection mortar for rebar (ETAG 001-5, Option 1)

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.



Ordering designation	Package contents	Sales pack quantity	Item number
HIT-RE 100/500/1 INT	1x Foil pack, 1x Mixer, 1x Mixer extension	1 pc	2123386
RE 100/500/1 + HDE A22 Dispenser	80x Foil pack, 1x Dispenser HDE 500-A22, 1x Cartridge Holder	1 pc	3732752

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

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ANCHORING SYSTEMS

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Dispenser HDE 500-22



APPLICATIONS

- Injecting Hilti HIT epoxy or adhesive mortar for fastening anchor rods and rebar in concrete and masonry
- Dispensing Hilti firestop foams (only when packaged in compatible soft foil packs)

ADVANTAGES

- Faster anchoring
- Significantly reduce mortar wastage
- Improve fastener safety and reliability
- Repeat and resume functions
- On the Nuron battery platform



Technical data

Power source type	Compact B22-55 or B22-85 battery pack
Dispenser type	Battery
Performance (at 20°C)	55 sec (RE100 500 ml)
B22-55 Battery capacity	100 cartridges (500 ml)
Dimension (L x W x H)	440mm x 120mm x 230 mm
Modes available	Off / continuous / smart discard / measured volume dispensing with ml
Dispensing volume per trigger	1 ml



Ordering designation	Content per can/cartridge	Sales pack quantity	Item number
HDE 500-22 + CB (Ultimate) 110V	1x Cordl. dispenser HDE 500-22, 1x Cartridge holder HIT-CB, 1x Battery pack B 22-55, 1x Battery charger C 4-22 110V	1 pc	3880132
HDE 500-22 + CR (Ultimate) 110V	1x Cordl. dispenser HDE 500-22, 1x Cartridge holder HIT-CR, 1x Battery pack B 22-55, 1x Battery charger C 4-22 110V	1 pc	3880183
HDE 500-22 + CB (Ultimate) 230V	1x Cordl. dispenser HDE 500-22, 1x Cartridge holder HIT-CB, 1x Battery pack B 22-55, 1x Battery charger C 4-22 230V	1 pc	3880184
HDE 500-22 + CR (Ultimate) 230V	1x Cordl. dispenser HDE 500-22, 1x Cartridge holder HIT-CR, 1x Battery pack B 22-55, 1x Battery charger C 4-22 230V	1 pc	3880186
Battery pack B 22-85 Li-ion	-	1 pc	2251351
Battery charger C 4-22 110V	-	1 pc	2372874
Battery charger C 4-22 230V	-	1 pc	2372873

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

HILTI SAFE SET TECHNOLOGY

A small step for engineers. And a giant leap forward for your next design.

Now you can design anchor rod and post-installed rebar connections with more confidence. Inadequately cleaning holes during installation can reduce the performance of conventional chemical anchor systems significantly. Hilti **SAFESET** Technology eliminates this factor almost entirely – in both cracked or uncracked concrete and with anchor rods or post-installed rebar.

APPLICATIONS

- Post-installed rebar connections forconcrete slab, column or wall extensions
- Heavy-duty anchoring in cracked or uncracked concrete, e.g. for steel beams, colum

WHAT IS SAFESET

Hilti **SAFESET** Technology eliminates the most load-affecting and time-consuming step in the installation process: cleaning the hole before injection of the adhesive. As a consequence, engineers can now have peace of mind because the specified application will perform on the jobsite as it has been designed in the plan.







SAFESET Application Ranges

Anchoring	
HIT-HY 200-R, standard drill bit and HIT-Z Rod (zero cleaning) SAFESET HIT-HY 200-R, HIT-RE100, HIT-RE 500 V3, Hollow Drill Bits and HAS-E Rod, HAS-U Rod or HIT-V Rod (auto-cleaning) SAFESET	
Rebar HIT-HY 200-R, HIT-RE100, HIT-RE 500 V3, Hollow Drill Bits and rebar (auto-cleaning) SAFE>ET	
Rebar size Y8 Y10 Y12 Y16 Y20 Y25 Drill hole dia. (12mm) (14mm) (16mm) (20mm) (25mm) (32mm)	Y32 (40mm)

INTRODUCING HILTI SAFESET TECHNOLOGY

Once in a blue moon, something comes along with the power to accelerate the way you work.



SAFEset is a registered trade mark of Hilti.

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ZERO CLEANING SOLUTION. HIT-Z anchor rods + HIT-HY 200-R

The new Hilti HIT-Z anchor rod works as a torque-contolled bonded anchor. Because of their unique shape, HIT-Z anchor rods, used in hammer-drilled holes in dry or water-saturated concrete above 5°C, are not affected by uncleaned holes. The benefits are clear: fewer steps and more productivity in anchoring applications.



	Drill	Set	Hilti SAFESET Techno Up to 60% faster!	ology
	Drill	Done	Productivity gain	
2	Anchor diameter ran	ge	M8 to M20	
	Material		Carbon or stainless steel (A4)	and a second sec
2	Embedment depth		Up to 12 times rod diameter	
	Concrete compressiv	ve strengths	C20/25 to C50/60	T
	Installation temperat	ure range	5°C to 40°C	~



AUTO-CLEANING SOLUTION. Hollow drill bits + HIT-HY 200-R / HIT-RE 100 / HIT-RE 500 V3

Hilti TE-CD and TE-YD hollow drill bits, in conjunction with HIT-HY 200-R, HIT-RE 100 or HIT-RE 500 V3, make subsequent hole cleaning completely unnecessary. Dust is removed by the Hilti vacuum system while drilling is in progress for faster drilling and a virtually dustless working environment.





Done

Hilti SAFE>ET Technology Up to 60% faster!

Productivity gain

	Rebar diameter range	Y8 to Y25	
ЪС	Threaded rod diameters	M10 to M30	
)	Embedment depth	Up to 1000 mm	and the second
·	Concrete compressive strengths	C20/25 to C50/60	
	Installation temperature range	-10°C to 40°C	



Another option is to continue using the traditional hole cleaning method with any Hilti HIT system for superior performance.



Customer Hotline: Hong Kong 8228 8118, Macau 00800 8228 8118 Email: hksales@hilti.com HIT-RE100 Epoxy Anchor (Post-Installed Rebar) Page 5 of 92

		HIT-HY 200-R	HIT-RE 500 V3	HIT-RE 100	HIT-HY 270
					CONTRACTOR OF
HIT-Z					
HAS-U	p.			•	
HIS-N			-	-	
Setting tool TE-C					
Setting tool HIS-S					
Mixer HIT-RE-M					
Profi accessories for HIT	\$2-14 1011 11	•	•	•	
HIT-SC					
CR Cartridge holder	(2019-5-20) 10-10-10-10-10-10-10-10-10-10-10-10-10-1				
CB Cartridge holder	College d				
HDE Dispenser	**				
TE-CD/YD Hollow drill bit			-		
VC 20/40 Vacuum cleaner	Ţ,	•			
Setting tool TE-C-E/ TE-Y-E					
Blow-out pump		•		•	
Steel brush	****************				



Hilti HIT-RE 100 injection mortar

Rebar design (EN 1992-1) / Rebar elements / Concrete









Same	66
European	CE
Technical	conformi

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European technical assessment a)	DIBt, Berlin	ETA – 15/0883 / 2016-04-21

Basic loading data & testing load

	Y10	Y12	Y16	Y20	Y25	Y32	Y40
Rebar diameter (mm) [Ød]	10	12	16	20	25	32	40
Hole diameter (mm)	12	16	20	25	32	40	50.8
Min. Embedment Depth (mm) [h1]	Min. embedment depth should be according to EN 1992-1-1 (clause 8.6)						
Ultimate mean pull-out load as per BS5080 Part 1 (kN) Test Report *See Remark 3	42.4	61.6	109.0	168.7	262.5	419.7	640.5
Yield load of Rebar (kN)	39.3	56.6	100.6	157.1	245.5	402.1	628.3
Max. Testing Load	34.1	49.2	87.5	136.7	213.5	349.8	546.6

Remarks:

1. It is based on non-cracked concrete with strength 25N/mm²;

- 2. Yield strength of rebar fyk is 500N/mm²;
- 3. There is no factor of safety introduced in the ultimate mean pull out load. Please apply appropriate factor of safety in your design;
- Onsite pullout test can be carried out to verify the workmanship of the installation but should not be 4. verification of the ultimate loading. The testing load shall be subjected to the designer's decision but should not exceed the 0.87 x yield load to avoid permanent damage to the rebar.
- 5. All the spacing and edge distance requirement for reinforced concrete design should be reference to BS8110;

Consumption table for quick reference



Rebar Size, φ	Hole diameter, d₀ [mm]	Depth of drilled hole, h ₁ [mm]	Volume of mortar, v [ml]
Y10	12	100	4
Y12	16	120	13
Y16	20	160	22
Y20	25	200	42
Y25	32	250	94
Y32	40	320	174
Y40	50.8 (2")	400	370

Remarks:

- 1. The volume of mortar corresponds to the formula "1.2* $(d_0^2 d_s^2)^* \pi^* h_1/4$ " for hammer drilling
- 2. 1 trigger pull of dispenser HDM is approx. 6 ml of RE 100.
 - To dispense 1 cartridge of 500ml RE 100 needs approx. 80 triggers.



Basic design data

Static EC2 design

Design bond strength in N/mm² according to ETA 15/0883 for good bond conditions

Pohar-sizo	Concrete class								
Repai-Size	C12/15	C16/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
All allowed har	All allowed hammer drilling methods								
φ8 - φ32	1,6	2,0	2,3	2,7	3,0	3,4	3,7	4,0	4,3
¢34	1,6	2,0	2,3	2,6	2,9	3,3	3,6	3,9	4,2
¢ 36	1,5	1,9	2,2	2,6	2,9	3,3	3,6	3,8	4,1
¢ 40	1,5	1,8	2,1	2,5	2,8	3,1	3,4	3,7	4,0
Diamond corin	g wet								
φ8 - φ32	1,6	2,0	2,3	2,7					
¢34	1,6	2,0	2,3	2,6					
¢36	1,5	1,9	2,2	2,6					
ф 40	1,5	1,8	2,1	2,5					

For poor bond conditions multiply the values by 0,7. Values valid for non-cracked and cracked concrete

Minimum anchorage length and minimum lap length

The minimum anchorage length $\ell_{b,min}$ and the minimum overlap length $\ell_{0,min}$ according to EN 1992-1-1 shall be multiplied by the relevant **Amplification factor** in the table below.

Amplification factor α_{lb} for the min. anchorage length and min. lap length according to EN 1992-1-1 for:

Bohor oizo	Concrete class								
Repai - Size	C12/15	C16/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
All allowed hammer drilling methods									
φ8 -φ40	1,0								
Diamond coring dry and wet									
φ8 -φ40	1,5								



Fitness for use

Some creep tests have been conducted in accordance with ETAG guideline 001 part 5 and TR 023 in the following conditions: in dry environment at 50 °C during 90 days. These tests show an excellent behaviour of the post-installed connection made with HIT-RE 100: low displacements with long term stability, failure load after exposure above reference load.

Resistance to chemical substances

Chemical	Resistance
Acetic acid 100%	0
Acetic acid 10%	+
Hydrochloric Acid 20%	+
Nitric Acid 40%	-
Phosphoric Acid 40%	+
Sulphuric acid 40%	+
Ethyl acetate 100%	0
Acetone 100%	-
Ammoniac 5%	0
Diesel 100%	+
Gasoline 100%	+
Ethanol 96%	0
Machine oils 100%	+

Chemical	Resistance
Methanol 100%	0
Peroxide of hydrogen 30%	0
Solution of phenol (sat.)	-
Sodium hydroxide pH=14	+
Solution of chlorine (sat.)	+
Solution of hydrocarbons (60 % vol Toluene, 30 % vol Xylene,10 % vol Methyl naphtalene)	+
Salted solution 10%	+
sodium chloride	
Suspension of concrete (sat.)	+
Chloroform 100%	+
Xylene 100%	+

resistant

resistant in short term (max. 48h) contact

not resistant

Electrical Conductivity

HIT-RE 100 in the hardened state is not conductive electrically. Its electric resistivity is $1,4\cdot10^{10}\,\Omega\cdot m$ (DIN IEC 93 – 12.93). It is adapted well to realize electrically insulating anchorings (ex: railway applications, subway).

Installation temperature range:

+5°C to +40°C

Service temperature range

Hilti HIT-RE 100 injection mortar may be applied in the temperature ranges given below. An elevated base material temperature may lead to a reduction of the design bond resistance.

Temperature range	Base material temperature	Maximum long term base material temperature	Maximum short term base material temperature
Temperature range I	-40 °C to +80 °C	+50 °C	+80 °C

Max short term base material temperature

Short-term elevated base material temperatures are those that occur over brief intervals, e.g. as a result of diurnal cycling.

Max long term base material temperature

Long-term elevated base material temperatures are roughly constant over significant periods of time.



Working time and curing time^{a)}

Temperature	Maximum working time	Initial curing time	Minimum curing time
IN the base material T _{BM}	t _{work}	t _{cure,ini} b)	t _{cure}
-5 $^{\circ}C \leq T_{BM} < ~9 \ ^{\circ}C$	2 hours	18 hours	72 hours
$10~^\circ C \leq T_{BM} < ~14~^\circ C$	1,5 hours	12 hours	48 hours
$15~^\circ C \leq T_{BM} < ~19~^\circ C$	30 min	8 hours	24 hours
$20~^\circ C \leq T_{BM} <~24~^\circ C$	25 min	6 hours	12 hours
$25~^\circ C \leq T_{BM} <~29~^\circ C$	20 min	5 hours	10 hours
$30~^\circ C \leq T_{BM} \leq ~39~^\circ C$	12 min	4 hours	8 hours
40 °C	12 min	2 hours	4 hours

a) The curing time data are valid for dry base material only. In wet base material the curing times must be doubled.
 b) After t_{care,in} has elapsed preparation work may continue

Setting information

Installation aquinmont

instanation equipment					
Rebar – size	φ8-φ16	ф18-ф40			
Rotary hammer	TE2(-A) – TE30(-A)	TE40 – TE80			
	Blow out pump (h _{ef} ≤ 10·d)	-			
Other tools	Compressed air gun ^{a)}				
	Set of cleaning brushes ^{b)} , dispenser, piston plug				

a) Compressed air gun with extension hose for all drill holes deeper than 250 mm (for φ 8 to φ 12) or deeper than 20 φ (for φ > 12 mm)
 b) Automatic brushing with round brush for all drill holes deeper than 250 mm (for φ 8 to φ 12) or deeper than 20 φ (for φ > 12 mm)

Minimum concrete cover c_{min} of the post-installed rebar

Drilling mothod	Pobar – sizo [mm]	Minimum concrete cover cmin [mm]			
Drining method	Rebai – Size [iiiii]	Without drilling aid	With drilling aid	Second Second 1	
Hammer drilling	φ < 25	$30 + 0.06 \cdot I_v \ge 2 \cdot \phi$	$30 + 0.02 \cdot I_v \ge 2 \cdot \phi$	matudationida	
(HD)	φ ≥ 25	$40 + 0,06 \cdot I_v \geq 2 \cdot \phi$	$40 + 0,02 \cdot I_v \geq 2 \cdot \phi$		
Compressed air	φ < 25	50 + 0,08 · I _v	50 + 0,02 · I _v	No. of the second s	
drilling (CA)	φ ≥ 25	$60 + 0.08 \cdot I_{V} \ge 2 \cdot \phi$	$60 + 0,02 \cdot I_v \ge 2 \cdot \phi$		
Diamond coring dry	φ < 25	Drill stand is used	$30 + 0,02 \cdot I_v \ge 2 \cdot \phi$		
(PCC) or wet (DD)	φ ≥ 25	as drilling aid	$40 + 0.02 \cdot I_v \ge 2 \cdot \phi$		



Drilling and cleaning diameters

	Hammer drill	ammer drill Compressed		nd core	Brush	Air nozzle	
Rebar [mm]	(HD)	air drill (CA)	Wet (DD)	Dry (PCC) ^{b)}	HIT-RB	HIT-RB	
		d₀ [mm]				ze	
12121212121212			6	8		(Ettem	
\$ 8	12 (10 ^{a)})	-	12 (10 ^{a)})	-	12 (10 ^{a)})	12 (10 ^{a)})	
¢10	14 (12 ^{a)})	-	14 (12 ^{a)})	-	14 (12 ^{a)})	14 (12 ^{a)})	
140	16 (14 ^{a)})	-	16 (14 ^{a)})	-	16 (14 ^{a)})	16 (14 ^{a)})	
φ12	-	17	-	-	18	16	
φ14	18	17	18	-	18	18	
140	20	-	20	-	20	20	
φιο	-	20	-	-	22	20	
φ18	22	22	22	-	22	22	
120	25 (24 ^{a)})	-	25	-	25 (24 ^{a)})	25 (24 ^{a)})	
φ20	-	26	-	-	28	25	
¢22	28	28	28	-	28	28	
¢24	32	32	32	35	32		
¢25	32 (30 ^{a)})	32 (30 ^{a)})	32 (30 ^{a)})	35	32 (30 ^{a)})	1	
¢26	35	35	35	35	35	1	
¢28	35	35	35	35	35	1	
100	-	35	35	25	35		
φ3U	37	-	-	30	37	1	
¢32	40	40	40	47	40	32	
104	-	42	42	47	42	1	
φ 34	45	-	-	47	45	1	
100	45	45	-	47	45]	
φοσ	-	-	47	47	47		
10	-	-	52	52	52]	
φ40	55	57	-	52	55		

a) Both of a given values can be used.
 b) No cleaning required.

Dispenser and corresponding maximum embedment depth L_{v,max}

	Dispenser					
Rebar	HDM 330, HDM 500	HDE 500				
	ا رب,max [mm]					
φ8 to φ10		1000				
φ12 to φ14	1000	1200				
φ16		1500				
φ18 to φ20	700	1300				
φ22 to φ25	700	1000				
φ26 to φ28	500	700				
φ30 to φ32		700				
φ34 to φ40	-	500				



Setting element, observe working time "twork".

Injection method for drill hole depth

Injection method for overhead

h_{ef} > 250mm.

application.

Setting element for overhead applications, observe working time "twork".

Apply full load only after curing time

"t_{cure}".



GEOTECHNICS & CONCRETE ENGINEERING (H. K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034 香港土力混凝土工程有限公司 九龍紅磡高山道六號地下 電話:852-2365 9123



HILTI (Hong Kong) Ltd

701-704, 7/F, Tower A, Manulife Financial Center, 223 Wai Yip Street, Kwun Tong, Kowloon

Tensile Proof Load Test on Anchor

Anchor Type : Hilti RE100 + Y10 Grade 500B

(Sample 1 to Sample 5)

Ref. Standard : BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3

Checked by: Technical Officer

Approved Signatory:

LAU SUN HUNG, WAN Senior Testing Manager

Issued Date: 12-Oct-2017

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Report No. GCD171000040

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1.0 Information

(a) Manufacturer	:	Hilti (Hong Kong) Ltd
(b) Chemical grout	:	Hilti RE100
(c) Rebar size and type	1	Y10 Grade 500B
(d) Mass concrete size	:	600mm x 600mm x 200mm
(e) Concrete grade	:	C25
(f) Drill hole diameter	:	12 mm
(g) Drill hole depth	;	100 mm
(h) Rebar embedment d	epth	: 100 mm
(i) Test standard	: BS	5080 : Part 1 : 1993 cl 6, 7.1.1 & 7.1.3

(j) Minimum distance between reaction frame and center of the fixing : 200 mm

(k) Minimum distance between the center of fixing and free edge : 300 mm

2.0 Test results

Anchor Type		Hilti RE	100 + Y10 Gra	de 500B	
Sample ID	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Failure load (kN)	42.7	41.3	42.6	42.9	42.5
Failure mode	F4	F4	F4	F4	F4
Average failure load (kN)			42.4	la de la della d	
Standard deviation (kN)			0.63		

Failure mode

P = No sign of failure in anchor/bar and/or structural member

F1 = Breaking of anchor /bar

F2 = Failure in structural member in a shear cone

F3 = Pull out of anchor/bar

F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar

F5 = Failure in structural member with crack radiates outward from anchor/bar

F6 = Other failure mode(s)

Issued Date: 12-Oct-2017

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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No.	:	GCD171000040		Date of Issue :	12-10-2017
Client	:	Hilti (Hong Kong) Ltd			
Address	:	701-704, 7/F, Tower A, Manulife Financi	ial Center, 223, Wai Yip S	Street, Kwun Tong, Kowloon	
Project	:		en e		
Test Location	ż	Workshop at Yick Yuen Tsuen			
Anchor Type	:	Hilti RE100+ Y10 Grade 500B	Date Tested	: 11-Oct-17	
GCE Reg. No.	:	GCE171990	Test Unit No.	: MI17182	

					Measured Re	sults			
Test Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0		0.0	0.00	0.00	0.00	P	
2		3.9	0.5	3.9	0.03	0.00	0.02	P	
3		7.9	0.5	7.9	0.13	-0.05	0.04	P	
4		11.8	0.5	11.8	0.24	-0.11	0.07	P	
5		15.7	0.5	15.7	0.34	-0.16	0.09	P	
6	CB	19.6	0.5	19.6	0.43	-0.18	0.13	P	Hilti RE100+ V10
7	00	23.6	0.5	23.6	0.51	-0.21	0.15	P	Grade 500B
8		27.5	0.5	27.5	0.59	-0.22	0.19	P	
9		31.4	0.5	31.4	0.67	-0.23	0.22	P	
10		35.3	0.5	35.3	0.77	-0.26	0.26	P	
11		39.3	0.5	39.3	1.06	-0.36	0.35	P	
12		43.2		42.7	2.01	-0.41	0.80	F4	
13									
	D) Fa E) Mir F) Mir G) Dri H) Dri I) Ani	llure Modes : nimum distance b nimum distance b I hole diameter /s I hole depth (mm	MR = meter $P = No sign$ $F2 = Failure$ $F4 = Sign of$ $F5 = Failure$ $F6 = Other f$ etween reac etween cents size (mm))	room IW = of failure in in structura any separa in structura allure mode tion frame a er of fixing a	Internal wall B anchor/bar and/o il member in a she ition, plastic defor I member with cra (s) : and center of fixing and free edge (mm	= beam F = floor r structural membe ear cone mation or deleterio ack radiates outwar g (mm) n)	slab C = column er us effect on anchor rd from anchor/bar 200 300 12 100	CB = concrete I F1 = Breaking of a F3 = Pull out of a or/bar	olock anchor /bar nchor/bar
	1) And	chor/rebar embed	ment depth	(mm)			100		
Information	n provided b	y customer							
Tested By	: <u>.</u>	K.K	. Wong		A	Approved Signat	ory :		



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171000040 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project : -**Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE100+ Y10 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Test StageLocation CodeSpecified Test Force (kN)Force Force (min)Force Force (min)Porced (mm)Deformation Gauge 1 (mm)Relative Deformation (mm)Failure Modes (see note D)1 $Code$ Force (kN)Time (min)Forced (kN)(mn) $Code$ $DeformationGauge 1(mm)RelativeDeformation(mm)Modes(see note D)10.00-0.000.000.000.00P23.90.53.9-0.010.090.044P37.90.57.90.010.170.08P15.70.515.7-0.020.300.144P515.70.527.5-0.020.3660.17P931.40.531.40.010.590.30P1035.30.535.30.050.6440.355P1139.30.539.30.090.8110.455P1243.2-41.30.541.521.03F413-1.522.8 deg at test: 8 daysB)Anchor/Rebar Installed Date : 9 Oct 2017CCa = colorned E : C252. Age at test: 8 daysB)Anchor/Rebar Installed Date : 9 Oct 2017CCa = colorned E : C252. Age at test: 8 daysB)Anchor/Rebar Installed Date : 9 O$	Type* ilti RE100+ Y10 Grade 500B
1 0.0 0.0 0.00 0.00 0.00 P 3 3.9 0.5 3.9 -0.01 0.09 0.04 P 3 7.9 0.5 7.9 -0.01 0.17 0.08 P 4 11.8 0.5 11.8 -0.01 0.22 0.11 P 5 11.8 0.5 19.6 -0.02 0.30 0.14 P 6 19.6 0.5 19.6 -0.02 0.30 0.14 P 8 27.5 0.5 27.5 -0.02 0.50 0.24 P 31.4 0.5 31.4 0.01 0.59 0.30 P 11 39.3 0.5 39.3 0.05 0.64 0.35 P 12 43.2 41.3 0.54 1.52 1.03 F4 12 43.2 - 41.3 0.54 1.52 1.03 F4	ilti RE100+ Y10 Grade 500B
2 3.9 0.5 3.9 -0.01 0.09 0.04 P 3 7.9 0.5 7.9 -0.01 0.17 0.08 P 4 11.8 0.5 11.8 -0.01 0.22 0.11 P 6 7 0.5 15.7 -0.02 0.30 0.14 P 7 23.6 0.5 23.6 -0.02 0.36 0.17 P 8 19.6 0.5 27.5 0.5 27.5 0.02 0.50 0.24 P 31.4 0.5 31.4 0.5 35.3 0.05 0.64 0.35 P 11 39.3 0.5 39.3 0.09 0.81 0.45 P 12 43.2 - 41.3 0.54 1.52 1.03 F4 13 0.5 1.5 ct 2017 C Location codes: C = corridor ST = stainway CE = ceiling EW = external wall SR = store room MR = meter room IW = internal wall B = beam F = floor slab C = column CB = concrete block D) Failure Modes: P = No sign of failure in anchor/bar and/or str	ilti RE100+ Y10 Grade 500B
3 7.9 0.5 7.9 -0.01 0.17 0.08 P 4 11.8 0.5 11.8 -0.01 0.22 0.11 P 5 15.7 0.5 15.7 -0.02 0.30 0.14 P 6 19.6 0.5 19.6 -0.02 0.36 0.17 P 7 23.6 0.5 27.5 -0.02 0.50 0.24 P 9 31.4 0.5 31.4 0.65 39.3 0.05 0.64 0.35 P 11 39.3 0.5 39.3 0.09 0.81 0.45 P 12 43.2 41.3 0.54 1.52 1.03 F4 13 Notes : A) Structural member: 1. Grade: C25 2. Age at test : 8 days B) Anchor /Rebar Installed Date : 9 Oct 2017 C) Location codes : CO = corridor ST = stainway CE = celling EW = external wall SR = store room MR = meter room IW = Internal	ilti RE100+ Y10 Grade 500B
4 11.8 0.5 11.8 -0.01 0.22 0.11 P 5 15.7 0.5 15.7 -0.02 0.30 0.14 P 6 7 19.6 0.5 19.6 -0.02 0.36 0.17 P Hill 7 23.6 0.5 23.6 -0.02 0.42 0.20 P 8 27.5 0.5 27.5 -0.02 0.50 0.24 P 9 31.4 0.5 31.4 0.01 0.59 0.30 P 10 35.3 0.5 39.3 0.05 0.64 0.35 P 12 43.2 - 41.3 0.54 1.52 1.03 F4 13 - - - 1.52 1.03 F4 12 - - - - 1.52 1.03 F4 12 - - - 1.52 1.03 F4	ilti RE100+ Y10 Grade 500B
5 15.7 0.5 15.7 -0.02 0.30 0.14 P 6 19.6 0.5 19.6 -0.02 0.36 0.17 P Hill 7 23.6 0.5 23.6 -0.02 0.42 0.20 P 8 27.5 0.5 27.5 -0.02 0.50 0.24 P 9 31.4 0.5 31.4 0.01 0.59 0.30 P 10 35.3 0.5 35.3 0.05 0.64 0.35 P 11 39.3 0.5 39.3 0.09 0.81 0.45 P 12 43.2 41.3 0.54 1.52 1.03 F4 13 - - - - - - - - 14 - - - - - - - - - - 15 B Anchor /Rebar Installed Date :	ilti RE100+ Y10 Grade 500B
6 CB 19.6 0.5 19.6 -0.02 0.36 0.17 P Hill 7 23.6 0.5 23.6 -0.02 0.42 0.20 P 8 27.5 0.5 27.5 -0.02 0.50 0.24 P 9 31.4 0.5 31.4 0.01 0.59 0.30 P 10 35.3 0.5 35.3 0.05 0.64 0.35 P 11 39.3 0.5 39.3 0.09 0.81 0.45 P 12 43.2 41.3 0.54 1.52 1.03 F4 13 41.3 0.54 1.52 1.03 F4 13 41.3 0.54 1.52 1.03 F4 13 <td>ilti RE100+ Y10 Grade 500B</td>	ilti RE100+ Y10 Grade 500B
7 8 23.6 0.5 23.6 -0.02 0.42 0.10 P 8 27.5 0.5 27.5 -0.02 0.50 0.24 P 9 31.4 0.5 31.4 0.01 0.59 0.30 P 10 35.3 0.5 35.3 0.05 0.64 0.35 P 11 39.3 0.5 39.3 0.09 0.81 0.45 P 12 43.2 41.3 0.54 1.52 1.03 F4 13 - - - 1.03 F4 - - 13 - - - - - - - - - Notes : A) Structural member: 1. Grade : C25 2. Age at test : 8 days 8 Anchor /Rebar Installed Date : 9 Oct 2017 C) Location codes : CO = corridor ST = stairway CE = celling EW = external wall SR = store room MR = meter room IW = Internal wall B = beam F = floor slab C = column CB = concrete block <t< td=""><td>Grade 500B</td></t<>	Grade 500B
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9 31.4 0.5 31.4 0.01 0.59 0.30 P 10 35.3 0.5 35.3 0.05 0.64 0.35 P 11 39.3 0.5 39.3 0.09 0.81 0.45 P 12 43.2 41.3 0.54 1.52 1.03 F4 13 - - 41.3 0.54 1.52 1.03 F4 13 - - 41.3 0.54 1.52 1.03 F4 13 - - - 41.3 0.54 1.52 1.03 F4 13 - - - 41.3 0.54 1.52 1.03 F4 13 - - - - - - - - - 143.2 - - - - - - - - - - - - - -	
1035.30.535.30.050.640.35P1139.30.539.30.090.810.45P1243.241.30.541.521.03F41341.30.541.521.03F41341.30.541.521.03F41341.30.541.521.03F41341.30.541.521.03F41341.30.541.521.03F413Notes : A) Structural member: 1. Grade: C252. Age at test : 8 daysB) Anchor /Rebar Installed Date : 9 Oct 2017C) Location codes : C0 = corridor ST = stairway CE = ceiling EW = external wall SR = store room MR = meter room IW = Internal wall B = beam F = floor slab C = column CB = concrete blockD) Failure Modes : P = No sign of failure in anchor/bar and/or structural member F2 = Failure in structural member in a shear coneF3 = Pull out of anchor F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar F5 = Failure in structural member with crack radiates outward from anchor/bar F6 = Other failure mode(s) :E) Minimum distance between center of fixing and free edge (mm)300G) Drill hole diameter /size (mm)12	
1139.30.539.30.090.810.45P1243.241.30.541.521.03F4131341.30.541.521.03F41341.30.541.521.03F41341.30.541.521.03F41341.30.541.521.03F41341.30.541.521.03F4Notes :Anchor /Rebar Installed Date : 9 Oct 2017C)Location codes :CO = corridor ST = stairway CE = ceiling EW = external wall SR = store room MR = meter room IW = Internal wall B = beam F = floor slab C = column CB = concrete blockD)Failure Modes :P = No sign of failure in anchor/bar and/or structural member F2 = Failure in structural member in a shear cone F3 = Pull out of anchor/bar F5 = Failure in structural member with crack radiates outward from anchor/bar F6 = Other failure mode(s) :E)Minimum distance between reaction frame and center of fixing (mm)200F)Minimum distance between center of fixing and free edge (mm)300G)Drill hole diameter /size (mm)12	
12 43.2 41.3 0.54 1.52 1.03 F4 13 13 13 1.03 F4 1.03 F4 Notes : A) Structural member : 1. Grade : C25 2. Age at test : 8 days B) Anchor /Rebar Installed Date : 9 Oct 2017 C) Location codes : C0 = corridor ST = stairway CE = ceiling EW = external wall SR = store room MR = meter room IW = Internal wall B = beam F = floor slab C = column CB = concrete block D) Failure Modes : P = No sign of failure in anchor/bar and/or structural member F1 = Breaking of anchor F2 = Failure in structural member in a shear cone F3 = Pull out of anchor/bar F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar F5 = Failure in structural member with crack radiates outward from anchor/bar F5 = Failure in structural member with crack radiates outward from anchor/bar F6 = Other failure mode(s) : E) Minimum distance between reaction frame and center of fixing (mm) 200 F) Minimum distance between center of fixing and free edge (mm) 300 G) Drill hole diameter /size (mm) 12	
13 13 1.03 1.03 14 13 13 1.03 1.03 14 13 13 1.03 1.03 14 13 13 1.03 1.03 14 13 13 10 1.03 14 14 13 10 1.03 14 14 13 10 1.03 14 14 13 10 1.03 14 14 14 14 14 14 15 Anchor /Rebar Installed Date : 9 Oct 2017 2. Age at test : 8 days 16 Location codes : C0 = corridor ST = stainway CE = ceiling EW = external wall SR = store room 17 C) Location codes : C0 = corridor ST = stainway CE = ceiling EW = external wall SR = store room 17 MR = meter room IW = Internal wall B = beam F = floor slab C = column CB = concrete block 10 Failure Modes : P = No sign of failure in anchor/bar and/or structural member F1 = Breaking of anchor 17 F2 = Failure in structural member in a shear cone F3 = Pull out of anchor 18 F3 = failure in structural member with crack radiates outward from anchor/bar F6 = O	
Notes : A) Structural member : 1. Grade : C25 2. Age at test : 8 days B) Anchor /Rebar Installed Date : 9 Oct 2017 C) Location codes : CO = corridor ST = stairway CE = ceiling EW = external wall SR = store room MR = meter room IW = Internal wall B = beam F = floor slab C = column CB = concrete block D) Failure Modes : P = No sign of failure in anchor/bar and/or structural member F1 = Breaking of anchor F2 = Failure in structural member in a shear cone F3 = Pull out of anchor F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar F5 = Failure in structural member with crack radiates outward from anchor/bar F5 = Failure in structural member with crack radiates outward from anchor/bar F6 = Other failure mode(s) : E) Minimum distance between reaction frame and center of fixing (mm) 200 F) Minimum distance between center of fixing and free edge (mm) 300 G) Drill hole diameter /size (mm) 12	
F6 = Other failure mode(s) : E) Minimum distance between reaction frame and center of fixing (mm) 200 F) Minimum distance between center of fixing and free edge (mm) 300 G) Drill hole diameter /size (mm) 12	hor /bar pr/bar
E)Minimum distance between reaction frame and center of fixing (mm)200F)Minimum distance between center of fixing and free edge (mm)300G)Drill hole diameter /size (mm)12	
F) Minimum distance between center of fixing and free edge (mm) 300 G) Drill hole diameter /size (mm) 12	
G) Drill hole diameter /size (mm) 12	
H) Drill hole depth (mm) 100	
 Anchor/rebar embedment depth (mm) 100 	
information provided by customer	
Tested By : K.K. Wong Approved Signatory : LAU SUN HUNG, IV	
Post : Senior Testing Mana	VAN
	VAN



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171000040 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project 1 ----**Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE100+ Y10 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 3

					Measured Re	sults			
Stage	Code	n Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0		0.0	0.00	0.00	0.00	Р	
2		3.9	0.5	3.9	0.09	0.00	0.05	Р	
3		7.9	0.5	7.9	0.09	0.05	0.07	P	
4		11.8	0.5	11.8	0.09	0.09	0.09	Р	
5		15.7	0.5	15.7	0.11	0.14	0.13	Р	
6	CB	19.6	0.5	19.6	0.14	0.18	0.16	Р	Hilti RE100+ Y1
7		23.6	0.5	23.6	0.18	0.23	0.21	Р	Grade 500B
8		27.5	0.5	27.5	0.21	0.27	0.24	P	
9	_	31.4	0.5	31.4	0.25	0.31	0.28	Р	
10		35.3	0.5	35.3	0.28	0.38	0.33	Р	
11		39.3	0.5	39.3	0.28	0.60	0.44	Р	
12		43.2		42.6	0.59	1.23	0.91	F4	
	D)	Failure Modes :	MR = meter P = No sign F2 = Failure F4 = Sign of	room IW : of failure in in structura any separa	= Internal wall B anchor/bar and/o Il member in a she ition, plastic defor	= beam F = floor r structural membe ear cone mation or deleteric	slab C = column er ous effect on ancho	CB = concrete I F1 = Breaking of F3 = Pull out of a pr/bar	olock anchor /bar nchor/bar
			F5 = Failure	in structura	I member with cra	ick radiates outwa	rd from anchor/bar		
	E) /	Minimum distance h	etween reco	tion frome	(s):	(mm)			
	E) 1	Minimum distance b	etween reac	or of fiving a	and center of fixing) (mm)	200		
	G) [annan distance b	vize (mm)	er or nxing a	ina iree eage (mn	1)	300		
	н) г	rill hole denth (mm	120 (mm)				12		
	D A	Anchor/rebar embed	/ Iment denth ((0000)			100		
- f			ment deput	(uuu)			100		
mormatio	ii provided	by customer						/	/
Tested By	:	К.К	. Wong	<u> </u>	£	Approved Signat	ory :	C	
				/A\			L	AU SUN HUN	G, IVAN

HIT-RE100 Epoxy Anchor (Post-Installed Rebar)

Checked By

Post

: Senior Testing Manager



REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

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Report No.	: GCD171000040	Date of Issue :	12-10-2017
Client	: Hilti (Hong Kong) Ltd		
Address	: 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwu	in Tona, Kowloon	
Project		in the state of th	
Test Location	: Workshop at Yick Yuen Tsuen		
Anchor Type	: Hilti RE100+ Y10 Grade 500B Date Tested : 11-Oct	-17	
GCE Reg. No.	: GCE171990 Test Unit No. : MI1718	82	

					Measured Re	sults			
Test Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0		0.0	0.00	0.00	0.00	P	
2		3.9	0.5	3.9	0.02	-0.01	0.01	P	
3		7.9	0.5	7.9	-0.04	0.05	0.01	P	
4		11.8	0.5	11.8	-0.12	0.16	0.02	P	
5		15.7	0.5	15.7	-0.16	0.22	0.03	P	
6	CP	19.6	0.5	19.6	-0.19	0.34	0.08	P	Hilti PE100+ V10
7	CB	23.6	0.5	23.6	-0.20	0.39	0.10	P	Grade 500B
8		27.5	0.5	27.5	-0.22	0.52	0.15	P	
9		31.4	0.5	31.4	-0.22	0.58	0.18	P	
10		35.3	0.5	35.3	-0.22	0.68	0.23	P	5
11		39.3	0.5	39.3	-0.22	0.79	0.20	P	
12		43.2		42.9	-0.22	1.23	0.51	E4	
13						HE0	0.01	14	
	C) Lo D) Fa E) Min F) Min G) Dri H) Dri I) An	cation codes : ilure Modes : nimum distance be nimum distance be Il hole diameter /s Il hole depth (mm) chor/rebar embed	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cento ize (mm)) ment depth (or ST = st. room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = ceil = Internal wall B = anchor/bar and/or I member in a she tion, plastic defor I member with cra (s) : ind center of fixing and free edge (mm	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ck radiates outwar (mm) n)	al wall SR = stor slab C = column er l us effect on ancho rd from anchor/bar 200 300 12 100 100	TE room CB = concrete I F1 = Breaking of a F3 = Pull out of ar nr/bar	olock anchor /bar nchor/bar
Information	n provided b	y customer							/
Tested By Checked B	:_ y :_	К.К.	Wong		P	pproved Signat	ory : L : S	AU SUN HUNG Senior Testing N	3, IVAN Manager



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171000040 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : -**Test** Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE100+ Y10 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

					Measured Re	sults			
Test Stage	Code	Specified Test Force (kN)	pecified Force Ap Test Holding Force Time Fc (kN) (min) (Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0		0.0	0.00	0.00	0.00	P	
2		3.9	0.5	3.9	0.08	0.00	0.04	P	-
3		7.9	0.5	7.9	0.19	0.00	0.10	P	
4		11.8	0.5	11.8	0.26	0.00	0.13	P	
5		15.7	0.5	15.7	0.32	0.01	0.17	P	
6	CB	19.6	0.5	19.6	0.38	0.01	0.20	P	Hilti RE100+ V1
7	00	23.6	0.5	23.6	0.43	0.03	0.23	P	Grade 500B
8		27.5	0.5	27.5	0.49	0.08	0.29	P	
9		31.4	0.5	31.4	0.53	0.10	0.32	P	
10		35.3	0.5	35.3	0.58	0.16	0.37	P	
11		39.3	0.5	39.3	0.64	0.21	0.43	P	
12		43.2		42.5	1.05	0.32	0.69	F4	
13					1100	0.02	0.00	14	
	D) Fai E) Min F) Min G) Dril	lure Modes : imum distance b	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f. etween react	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing	r structural membe ear cone mation or deleterio ick radiates outwar i (mm)	er I us effect on ancho rd from anchor/bar 200	F1 = Breaking of a F3 = Pull out of ar r/bar	anchor /bar nchor/bar
	H) Dril	l hole diameter /s I hole depth (mm	size (mm))	a at ming a	ind free edge (mm	1)	300 12 100		
	H) Drill I) And	l hole diameter /s l hole depth (mm hor/rebar embed	size (mm)) Iment depth ((mm)	nd free edge (mm	1)	300 12 100 100		
Information	H) Drill I) And	l hole diameter /s l hole depth (mm hor/rebar embed y customer	iize (mm)) Iment depth ((mm)	nd free edge (mm)	300 12 100 100		

GEOTECHNICS & CONCRETE ENGINEERING (H.K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034



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Issued date: 12 Oct 2017

Hilti RE100 + Y10 Grade 500B



Report No: GCD171000040



GEOTECHNICS & CONCRETE ENGINEERING (H. K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034 香港土力混凝土工程有限公司 九龍紅磡高山道六號地下 電話:852-2365 9123



HILTI (Hong Kong) Ltd

701-704, 7/F, Tower A, Manulife Financial Center, 223 Wai Yip Street, Kwun Tong, Kowloon

Tensile Proof Load Test on Anchor

Anchor Type : Hilti RE100 + Y12 Grade 500B

(Sample 1 to Sample 5)

Ref. Standard : BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3

Checked by: Technical Officer

Approved Signatory:

LAU SUN HUNG, IVAN Senior Testing Manager

Issued Date: 12-Oct-2017

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Report No. GCD171001397



1.0 Information

(a) Manufacturer	•	Hilti (Hong Kong) Ltd
(b) Chemical grout	:	Hilti RE100
(c) Rebar size and type	:	Y12 Grade 500B
(d) Mass concrete size	1	720mm x 720mm x 240mm
(e) Concrete grade	:	C25
(f) Drill hole diameter	:	16 mm
(g) Drill hole depth	:	120 mm
(h) Rebar embedment d	epth	: 120 mm
(i) Test standard	: BS	5080 Part 1 : 1993 cl 6, 7.1.1 & 7.1.3

(j) Minimum distance between reaction frame and center of the fixing : 240 mm

(k) Minimum distance between the center of fixing and free edge : 360 mm

2.0 Test results

Anchor Type		Hilti RE	100 + Y12 Gra	de 500B	
Sample ID	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Failure load (kN)	61.3	61.9	61.5	61.7	62.0
Failure mode	F4	F4	F4	F4	F4
Average failure load (kN)			61.6		
Standard deviation (kN)			0.29		

Failure mode

P = No sign of failure in anchor/bar and/or structural member

- F1 = Breaking of anchor /bar
- F2 = Failure in structural member in a shear cone
- F3 = Pull out of anchor/bar
- F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar
- F5 = Failure in structural member with crack radiates outward from anchor/bar
- F6 = Other failure mode(s) :

Issued Date: 12-Oct-2017



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001397 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project : -Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y12 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

					Measured Re	sults			
Test Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		5.7	0.5	5.7	0.00	0.07	0.04	P	
3		11.3	0.5	11.3	0.10	0.04	0.07	P	
4		17.0	0.5	17.0	0.20	0.01	0.11	P	
5		22.6	0.5	22.6	0.31	0.00	0.16	P	
6	CB	28.3	0.5	28.3	0.43	-0.03	0.20	Р	Hilti RE 100 +
7	CD	33.9	0.5	33.9	0.52	-0.04	0.24	P	Y12 Grade
8		39.6	0.5	39.6	0.62	-0.05	0.29	P	500B
9		45.2	0.5	45.2	0.68	-0.04	0.32	P	
10		50.9	0.5	50.9	0.75	0.01	0.38	P	
11		56.5	0.5	56.5	0.83	0.02	0.43	P	
12		62.2		61.3	1.17	1.00	1.09	F4	
13							1.00	17	
Notes :	A) Str B) An C) Loo	uctural member : chor /Rebar Insta ation codes :	illed Date : 9 CO = corride	1. Grade : C Oct 2017 or ST = st	25 : airway CE = cel	2. Age at test : { ling EW = extern	8 days nal wall SR = stor	e room	
Notes :	A) Str B) An C) Loo D) Fai	uctural member : chor /Rebar Insta ation codes : lure Modes : imum distance b	Illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa in structura ailure mode tion frame a	25 ; airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing	2. Age at test : 8 ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwa g (mm)	8 days nal wall SR = stor slab C = column er nus effect on ancho rd from anchor/bar 240	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar r/bar	olock anchor /bar nchor/bar
Notes :	A) Str B) An C) Loo D) Fai E) Mir F) Mir	uctural member : chor /Rebar Insta ation codes : lure Modes : imum distance b imum distance b	illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween cent	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa in structura ailure mode tion frame a er of fixing a	25 ; airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defon I member with cra (s) : nd center of fixing und free edge (mm	2. Age at test : 8 ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio tok radiates outwa (mm) n)	3 days nal wall SR = stor slab C = column er hous effect on ancho rd from anchor/bar 240 360	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an n/bar	olock anchor /bar achor/bar
Notes :	A) Str B) An C) Loo D) Fai E) Mir F) Mir G) Dril	uctural member : chor /Rebar Insta ation codes : lure Modes : imum distance b imum distance b	illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween centure size (mm)	1. Grade : C Oct 2017 or ST = sto room IW = of failure in in structura f any separa ailure mode tion frame a er of fixing a	25 ; airway CE = cei = Internal wall B = anchor/bar and/o I member in a she tion, plastic defon I member with cra (s) : nd center of fixing and free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwar i (mm) i)	8 days nal wall SR = stor slab C = column er nus effect on ancho rd from anchor/bar 240 360 16	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an n/bar	olock anchor /bar nchor/bar
Notes :	A) Str B) An C) Loo D) Fai F) Mir G) Dril H) Dril I) And	uctural member : chor /Rebar Insta ation codes : lure Modes : lure Modes : imum distance b imum distance b hole diameter /s hole depth (mm hor/rebar embed	Illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa in structura ailure mode tion frame a er of fixing a	25 ; airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwa i (mm) i)	8 days sal wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 240 360 16 120 120	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar n/bar	olock anchor /bar nchor/bar
Notes :	A) Str B) An C) Loo D) Fai G) Dril H) Dril I) And	uctural member : chor /Rebar Insta ation codes : lure Modes : lure Modes : lure Modes : hole diameter /s hole diameter /s hole depth (mm hor/rebar embed y customer	Illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)) Iment depth	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa in structura ailure mode tion frame a er of fixing a	25 ; airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwa i (mm) i)	8 days nal wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 240 360 16 120 120	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar n/bar	olock anchor /bar nchor/bar



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001397 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project ÷ **Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y12 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Tost	1.000				Measured Re	sults			
Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	P	
2		5.7	0.5	5.7	-0.01	0.12	0.06	P	
3		11.3	0.5	11.3	-0.04	0.21	0.09	P	
4		17.0	0.5	17.0	-0.05	0.31	0.13	P	
5		22.6	0.5	22.6	-0.04	0.32	0.14	P	
6	CB	28.3	0.5	28.3	-0.05	0.35	0.15	P	Hilti RE 100 +
7	CD	33.9	0.5	33.9	-0.03	0.37	0.17	P	Y12 Grade
8		39.6	0.5	39.6	-0.02	0.41	0.20	P	500B
9		45.2	0.5	45.2	0.03	0.52	0.28	P	
10		50.9	0.5	50.9	0.07	0.63	0.35	P	
11		56.5	0.5	56.5	0.07	0.69	0.38	P	
12		62.2	-	61.9	0.16	1.09	0.63	E4	
13					0.10	1.00	0.00	14	
	C) Loc	ation codes :	CO = corrido	or ST = st	airway CE = ceil	ling EW = extern	nal wall SR = stor	re room	
	C) Loc D) Fail	ation codes : ure Modes :	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fr	or ST = st room IW = of failure in in structura any separa in structura	alrway CE = ceil = Internal wall B = anchor/bar and/oi I member in a she tion, plastic defori I member with cra	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio tock radiates outwa	nal wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar Ichor/bar
	C) Loc D) Fail E) Mini	ation codes : ure Modes : mum distance b	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react	or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a	airway CE = ceil = Internal wall B = anchor/bar and/ou I member in a she tion, plastic defort I member with cra (s) : nd center of fixing	ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric lock radiates outwa	aal wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar 240	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar ichor/bar
	C) Loc D) Fail E) Mini F) Mini	ation codes : ure Modes : mum distance b mum distance b	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween center	or ST = st room IW = of failure in in structura any separa ailure mode tion frame a aer of fixing a	airway CE = ceil = Internal wall B = anchor/bar and/oi I member in a she tion, plastic defori I member with cra (s) : nd center of fixing ind free edge (mm	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwa (mm)	al wall SR = stor slab C = column ar bus effect on ancho rd from anchor/bar 240 360	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an pr/bar	olock anchor /bar Ichor/bar
	C) Loc D) Fail E) Mini F) Mini G) Drill	ation codes : ure Modes : mum distance b mum distance b hole diameter /s	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween center size (mm)	or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = ceil = Internal wall B = anchor/bar and/ou I member in a she tion, plastic deforn I member with cra (s) : nd center of fixing nd free edge (mm	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio tick radiates outwa ti (mm) n)	al wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 240 360	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar Ichor/bar
	C) Loc D) Fail E) Mini F) Mini G) Drill H) Drill	ation codes : ure Modes : mum distance b mum distance b hole diameter /s hole depth (mm	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi- etween react etween centra- size (mm))	or ST = st room IW = of failure in in structura in structura ailure mode tion frame a er of fixing a	alrway CE = ceil = Internal wall B = anchor/bar and/or I member in a she tion, plastic deford I member with cra (s) : nd center of fixing ind free edge (mm	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwar (mm) n)	aal wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 240 360 16	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar Iichor/bar
	C) Loc D) Fail E) Mini F) Mini G) Drill H) Drill I) Anci	ation codes : ure Modes : mum distance b mum distance b hole diameter /s hole depth (mm hor/rebar embed	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi- etween react etween central size (mm)) Iment depth (or ST = st room IW = of failure in in structura in structura ailure mode tion frame a er of fixing a	airway CE = ceil = Internal wall B = anchor/bar and/or I member in a she tion, plastic deford tion, plastic deford I member with cra (s) : nd center of fixing ind free edge (mm	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio tock radiates outwar (mm) n)	nal wall SR = stor slab C = column er l bus effect on anchor rd from anchor/bar 240 360 16 120 120	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar Ichor/bar
Information	C) Loc D) Fail E) Mini F) Mini G) Drill H) Drill I) Ancl	ation codes : ure Modes : mum distance b mum distance b hole diameter /s hole depth (mm hor/rebar embed	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween center size (mm)) ment depth (or ST = st room IW = of failure in in structura in structura ailure mode tion frame a ar of fixing a	airway CE = ceil = Internal wall B = anchor/bar and/ou I member in a she tion, plastic deforn I member with cra (s) : nd center of fixing ind free edge (mm	ling EW = extern = beam F = floor r structural member ear cone mation or deleterio tock radiates outwar (mm) n)	nal wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 240 360 16 120 120	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar ichor/bar



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001397 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project 1.12 **Test** Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y12 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 3

	(Measured Re	sults			
Test Stage	Locatio Code	n Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		5.7	0.5	5.7	0.28	-0.18	0.05	Р	
3		11.3	0.5	11.3	0.23	-0.01	0.11	Р	
4		17.0	0.5	17.0	0.24	0.10	0.17	P	
5		22.6	0.5	22.6	0.30	0.14	0.22	P	
6	CB	28.3	0.5	28.3	0.38	0.13	0.26	P	Hilti RE 100 +
7	СB	33.9	0.5	33.9	0.46	0.12	0.29	P	Y12 Grade
8		39.6	0.5	39.6	0.53	0.12	0.33	P	500B
9		45.2	0.5	45.2	0.64	0.12	0.38	P	
10		50.9	0.5	50.9	0.73	0.12	0.43	P	
11		56.5	0.5	56.5	0.83	0.11	0.47	P	
12		62.2	-	61.5	1.38	0.15	0.77	F4	
13					1100	0.10	0.17	1.4	
	C) D) F) G) [H) [Location codes : Failure Modes : Minimum distance b Drill hole diameter /s Drill hole diameter /s Drill hole depth (mm	CO = corrid MR = meter P = No sign $F2 = FailureF4 = Sign ofF5 = FailureF6 = Other fnetween reac-netween centsize (mm))$	or ST = st room IW : of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o Il member in a shu ttion, plastic defor Il member with cra (s) : and center of fixing and free edge (mn	ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa g (mm) n)	nal wall SR = sto slab C = column er ous effect on ancho rd from anchor/ban 240 360 16 120	re room CB = concrete b F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar lichor/bar
	I) A	Anchor/rebar embed	ment depth	(mm)			120		
	(3 4 .) 533						120		
Informatio	n provided	by customer							
Tested By	,	кк	Wong			Annroved Signal		\langle	1

Checked By



Approved Signatory

LAU SUN HUNG, IVAN : Senior Testing Manager

Post



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001397 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project 8 **Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y12 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 4

					Measured Re	sults			
Test Stage	Locatio Code	Code Force (kN) (Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		5.7	0.5	5.7	0.18	-0.15	0.02	P	
3		11.3	0.5	11.3	0.11	-0.03	0.04	P	
4		17.0	0.5	17.0	0.07	0.09	0.08	P	
5		22.6	0.5	22.6	-0.01	0.23	0.11	P	
6	CP	28.3	0.5	28.3	-0.06	0.31	0.13	P	Hilti RE 100 +
7	CB	33.9	0.5	33.9	-0.08	0.40	0.16	P	Y12 Grade
8		39.6	0.5	39.6	-0.19	0.57	0.19	P	500B
9		45.2	0.5	45.2	-0.27	0.71	0.22	P	
10		50.9	0.5	50.9	-0.47	0.97	0.25	P	
11		56.5	0.5	56.5	-0.47	1.08	0.25	P	
12		62.2	-	61.7	-0.48	1.68	0.60	F EA	
13		All Market States		0.111	0.10	1.00	0.00	14	
Notes :	A) B)	Structural member	;	1. Grade : C	25	2. Age at test : 4	8 days		
	0)	Anonor Rebar Insta	alled Date : 9	Oct 2017			50 STATES		
	0)	Location codes :	CO = corrid	or SI=st	airway CE = cei	ling EW = extern	nal wall SR = stor	e room	
		Colline Medee	MR = meter	room IW =	= Internal wall B	= beam F = floor	slab C = column	CB = concrete b	block
	D)	Pallure Modes :	P = No sign	of failure in	anchor/bar and/o	r structural membe	er	F1 = Breaking of a	anchor /bar
			F2 = Failure	in structura	member in a she	ear cone]	F3 = Pull out of an	ichor/bar
			F4 = Sign of	any separa	tion, plastic defor	mation or deleterio	ous effect on ancho	n/bar	
			F5 = Failure	in structura	I member with cra	ick radiates outwa	rd from anchor/bar		
	-		F6 = Other f	ailure mode	(s):				
	E)	Minimum distance b	etween reac	tion frame a	nd center of fixing) (mm)	240		
	F)	Minimum distance b	etween cent	er of fixing a	ind free edge (mn	ר)	360		
	(6)	Drill hole diameter /:	size (mm)				16		
	H)	Unii hole depth (mm	1)				120		
	1)	Anchor/rebar embed	iment depth	(mm)			120		



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001397 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : 4 Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y12 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 5

					Measured Re	sults			
Stage	Code	Code Force Tim (kN) (mir	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	P	
2		5.7	0.5	5.7	0.21	-0.15	0.03	Р	
3		11.3	0.5	11.3	0.19	-0.07	0.06	Р	
4		17.0	0.5	17.0	0.23	-0.04	0.10	Р	
5		22.6	0.5	22.6	0.26	0.03	0.15	Р	
6	CB	28.3	0.5	28.3	0.23	0.09	0.16	Р	Hilti RE 100 ·
7	00	33.9	0.5	33.9	0.30	0.16	0.23	Р	Y12 Grade
8		39.6	0.5	39.6	0.32	0.25	0.29	Р	200B
9		45.2	0.5	45.2	0.36	0.32	0.34	P	
10		50.9	0.5	50.9	0.41	0.40	0.41	P	
11		56.5	0.5	56.5	0.48	0.47	0.48	P	
12		62.2	-	62.0	0.75	0.71	0.73	F4	
7.63270							(Antoreton)		
13									
Notes :	A) Sti B) An C) Lo D) Fa	ructural member : ichor /Rebar Insta cation codes : ilure Modes :	illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura any separa in structura	25 ; alrway CE = cei = Internal wall B ; anchor/bar and/o I member in a she tion, plastic defori I member with cra (c) ;	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwa	3 days al wall SR = stor slab C = column er I nus effect on anchor rd from anchor/bar	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock Inchor /bar Ichor/bar
Notes :	A) Sti B) An C) Lo D) Fa	ructural member : achor /Rebar Insta cation codes : ilure Modes : nimum distance b	Illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fa etween react	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a	25 ; alrway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defori I member with cra (s) : nd center of fixing	2. Age at test : 8 ling EW = extern = beam F = floor r structural member ear cone mation or deleterio ack radiates outwar a (mm)	a days al wall SR = stor slab C = column er l nus effect on ancho rd from anchor/bar	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock anchor /bar ichor/bar
Notes :	A) Str B) An C) Lo D) Fa E) Min F) Min	ructural member ; inchor /Rebar Insta cation codes ; ilure Modes ; nimum distance b	illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura any separa in structura allure mode tion frame a	25 ; alrway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwar g (mm)	3 days al wall SR = stor slab C = column er l us effect on ancho rd from anchor/bar 240 260	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock anchor /bar ichor/bar
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Notes :	A) Str B) An C) Lo D) Fa E) Min F) Min G) Dri H) Dri	nuctural member : achor /Rebar Insta cation codes : ilure Modes : nimum distance b nimum distance b Il hole diameter /s Il hole diameter /s	illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cento size (mm))	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	25 :25 : alrway CE = cei = Internal wall B : anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing nd free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwar (mm) 1)	3 days slab C = column er I nus effect on anchor rd from anchor/bar 240 360 16	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock anchor /bar ichor/bar
Notes :	A) Str B) An C) Lo D) Fa D) Fa F) Mir G) Dri H) Dri I) An	ructural member : inchor /Rebar Insta cation codes : ilure Modes : ilure Modes : ilmum distance b ilmum distance b il hole diameter /s il hole depth (mm chor/rebar embed	illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween centa size (mm)) Iment depth of	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	25 ; alrway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing nd free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwar (mm) 1)	al wall SR = stor slab C = column er I us effect on anchor rd from anchor/bar 240 360 16 120	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	olock anchor/bar ichor/bar

Tested By

Checked By :



Approved Signatory

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LAU SUN HUNG, IVAN : Senior Testing Manager

Post

GEOTECHNICS & CONCRETE ENGINEERING (H.K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034





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GEOTECHNICS & CONCRETE ENGINEERING (H. K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034 香港土力混凝土工程有限公司 九龍紅磡高山道六號地下 電話:852-2365 9123



HILTI (Hong Kong) Ltd

701-704, 7/F, Tower A, Manulife Financial Center, 223 Wai Yip Street, Kwun Tong, Kowloon

Tensile Proof Load Test on Anchor

Anchor Type : Hilti RE100 + Y16 Grade 500B

(Sample 1 to Sample 5)

Ref. Standard : BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3

Checked by:

Technical Officer

Approved Signatory:

LAU SUN HUNG, IVAN Senior Testing Manager

Issued Date: 12-Oct-2017

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1.0 Information

(a) Manufacturer	:	Hilti (Hong Kong) Ltd
(b) Chemical grout	1	Hilti RE100
(c) Rebar size and type	:	Y16 Grade 500B
(d) Mass concrete size	:	960mm x 960mm x 320mm
(e) Concrete grade	:	C25
(f) Drill hole diameter	:	20mm
(g) Drill hole depth	:	160mm
(h) Rebar embedment d	epth	: 160mm
(i) Test standard	: BS	5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3
(i) Minimum distance ha	twoor	proportion frame and evolve fille film appro-

(J) Minimum distance between reaction frame and center of the fixing : 320 mm

(k) Minimum distance between the center of fixing and free edge : 480 mm

2.0 Test results

Anchor Type		Hilti RE	100 + Y16 Gra	de 500B	
Sample ID	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Failure load (kN)	107.4	109.2	108.6	110.2	109.8
Failure mode	F4	F4	F4	F4	F4
Average failure load (kN)			109.0		
Standard deviation (kN)			1.10		

Failure mode

P = No sign of failure in anchor/bar and/or structural member

F1 = Breaking of anchor /bar

F2 = Failure in structural member in a shear cone

F3 = Pull out of anchor/bar

F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar

F5 = Failure in structural member with crack radiates outward from anchor/bar

F6 = Other failure mode(s) :

Issued Date: 12-Oct-2017



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001402 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : -**Test Location** : Workshop at Yick Yuen Tsuen Hilti RE 100 + Y16 Grade 500B Anchor Type Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 1

Test					Measured Re	sults			
Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		10.1	0.5	10.1	0.08	0.01	0.05	P	
3		20.1	0.5	20.1	0.20	-0.07	0.07	P	
4		30.2	0.5	30.2	0.35	-0.12	0.12	Р	
5		40.2	0.5	40.2	0.44	-0.12	0.16	P	
6	CP	50.3	0.5	50.3	0.52	-0.10	0.21	P	Hilti RE 100 +
7	CD	60.3	0.5	60.3	0.60	-0.08	0.26	P	Y16 Grade
8		70.4	0.5	70.4	0.72	-0.05	0.34	P	500B
9		80.4	0.5	80.4	0.77	-0.05	0.36	P	
10		90.5	0.5	90.5	0.90	-0.03	0.44	P	
11		100.5	0.5	100.5	1.09	-0.03	0.53	P	
12		110.6	-	107.4	1.58	0.28	0.93	F4	
	B) Ar C) Lo D) Fa	nchor /Rebar Insta acation codes : ailure Modes :	Illed Date : 9 CO = corrid MR = meter P = No sign	Oct 2017 or ST = st room IW = of failure in	airway CE = cei = Internal wall B anchor/bar and/o	ling EW = extern = beam F = floor r structural membe	al wall SR = stor slab C = column	re room CB = concrete b F1 = Breaking of c	lock
			F2 = Failure F4 = Sign of	in structura any separa	I member in a she	ar cone	- 	F3 = Pull out of an	anchor /bai
			F5 = Failure F6 = Other f	in structura ailure mode	I member with cra	mation or deleterio lick radiates outwa	us effect on ancho rd from anchor/bar	or/bar	ichor/bar
	E) Mi	nimum distance b	F5 = Failure F6 = Other f etween reac	in structura ailure mode tion frame a	I member with cra (s) : and center of fixing	mation or deleterio ick radiates outwa i (mm)	us effect on ancho rd from anchor/bar 320	or/bar	chor/bar
	E) Mi F) Mi	nimum distance b nimum distance b	F5 = Failure F6 = Other f etween reac etween cent	in structura ailure mode tion frame a er of fixing a	I member with cra (s) : Ind center of fixing and free edge (mm	mation or deleterio ick radiates outwa i (mm) i)	us effect on ancho rd from anchor/bar 320 480	or/bar	chor/bar
	E) Mi F) Mi G) Dr	nimum distance b nimum distance b ill hole diameter /s	F5 = Failure F6 = Other f etween reac etween cent size (mm)	in structura ailure mode tion frame a er of fixing a	il member with cra (s) : and center of fixing and free edge (mn	mation or deleteric lick radiates outwa I (mm) I)	us effect on ancho rd from anchor/bar 320 480 20	or/bar	(chor/bar
	E) Mi F) Mi G) Dr H) Dr	nimum distance b nimum distance b ill hole diameter /s ill hole depth (mm	F5 = Failure F6 = Other f etween reac etween cent size (mm)	in structura ailure mode tion frame a er of fixing a	I member with cra (s) : and center of fixing and free edge (mm	mation or deleteric ick radiates outwa i (mm) i)	us effect on ancho rd from anchor/bar 320 480 20 160	or/bar	(chor/bar
	E) Mi F) Mi G) Dr H) Dr I) An	nimum distance b nimum distance b ill hole diameter /s ill hole depth (mm chor/rebar embed	F5 = Failure F6 = Other f etween reac etween cent size (mm)) Iment depth	in structura ailure mode tion frame a er of fixing a (mm)	I member with cra (s) : and center of fixing and free edge (mm	mation or deleteric lick radiates outwa l (mm) l)	us effect on ancho rd from anchor/bar 320 480 20 160 160	or/bar	(chor/bar

Checked By



Approved Signatory

LAU SUN HUNG, IVAN : Senior Testing Manager

HIT-RE100 Epoxy Anchor (Post-Installed Rebar)

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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001402 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project 1 -**Test Location** : Workshop at Yick Yuen Tsuen : Hilti RE 100 + Y16 Grade 500B Anchor Type Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

					Measured Res	sults			
Test Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	-0.02	-0.01	Р	
2		10.1	0.5	10.1	0.13	-0.02	0.06	P	
3		20.1	0.5	20.1	0.24	-0.02	0.11	P	
4		30.2	0.5	30.2	0.31	-0.02	0.15	P	
5		40.2	0.5	40.2	0.40	-0.02	0.19	P	
6	CB	50.3	0.5	50.3	0.43	-0.02	0.21	P	Hilti RE 100 +
7	СВ	60.3	0.5	60.3	0.53	-0.02	0.26	P	Y16 Grade
8		70.4	0.5	70.4	0.60	-0.02	0.29	P	500B
9		80.4	0.5	80.4	0.70	-0.02	0.34	P	
10		90.5	0.5	90.5	0.83	0.03	0.43	P	
11		100.5	0.5	100.5	1.04	0.16	0.60	P	
12		110.6	-	109.2	1.65	0.52	1.09	F4	
13						(200 (200 C))		• 10.10	
Notes :	A) Stru B) Anc	ictural member : hor /Rebar Insta	alled Date : 9	1. Grade : C Oct 2017	25	2. Age at test : 8	days		
Notes :	A) Stru B) And C) Loc D) Faih	uctural member : hor /Rebar Insta ation codes : ure Modes :	alled Date : 9 CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa in structura	25 ; alrway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defori I member with cra	2. Age at test : 8 ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwar	al wall SR = stor slab C = column er us effect on anchor d from anchor/bar	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar nchor/bar
Notes :	A) Stru B) Anc C) Loc D) Faile	uctural member : hor /Rebar Insta ation codes : ure Modes : mum distance b	alled Date : 9 CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa in structura ailure mode tion frame a	25 ; airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defon I member with cra (s) : nd center of fixing	2. Age at test : 8 ling EW = extern = beam F = floor r structural member ear cone mation or deleterio ack radiates outwar a (mm)	days al wall SR = stor slab C = column er us effect on anchor rd from anchor/bar	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	olock anchor /bar nchor/bar
Notes :	A) Stru B) Anc C) Loc D) Faile E) Mini F) Mini	uctural member : hor /Rebar Insta ation codes : ure Modes : mum distance b mum distance b	alled Date : 9 CO = corridon MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa allure mode tion frame a er of fixing a	25 ; airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing and free edge (mo	2. Age at test : 8 ling EW = extern = beam F = floor r structural member ear cone mation or deleterio ack radiates outwar g (mm)	al wall SR = stor slab C = column er us effect on ancho rd from anchor/bar 320	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar r/bar	olock anchor /bar nchor/bar
Notes :	A) Stru B) And C) Loc D) Faile E) Mini F) Mini G) Drill	uctural member : hor /Rebar Insta ation codes : ure Modes : mum distance b mum distance b hole diameter /s	alled Date : 9 CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa ailure mode tion frame a er of fixing a	25 ; airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing and free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwar g (mm) n)	al wall SR = stor slab C = column er l us effect on anchor rd from anchor/bar 320 480 20	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar ichor/bar
Notes :	A) Stru B) And C) Loc D) Faile E) Mini F) Mini G) Drill H) Drill	uctural member : hor /Rebar Insta ation codes : ure Modes : mum distance b mum distance b hole diameter /s hole depth (mm	alled Date : 9 CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa ailure mode tion frame a er of fixing a	25 ; alrway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defori I member with cra (s) : Ind center of fixing and free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwar g (mm) n)	al wall SR = stor slab C = column er l us effect on anchor rd from anchor/bar 320 480 20	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	olock anchor /bar nchor/bar
Notes :	A) Stru B) Anc C) Loc D) Faile F) Mini G) Drill H) Drill I) Anci	uctural member : hor /Rebar Insta ation codes : ure Modes : mum distance b mum distance b hole diameter /s hole depth (mm hor/rebar embed	alled Date : 9 CO = corridon MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)) Iment depth	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa allure mode tion frame a er of fixing a	25 ; airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defort I member with cra (s) : nd center of fixing ind free edge (mm	2. Age at test : 8 ling EW = extern = beam F = floor r structural member ear cone mation or deleterio nok radiates outwar g (mm) n)	al wall SR = stor slab C = column er I us effect on ancho rd from anchor/bar 320 480 20 160 160	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar r/bar	olock anchor /bar nchor/bar
Notes :	A) Stru B) Anc C) Loc D) Fail F) Mini G) Drill H) Drill I) Ancl	uctural member : hor /Rebar Insta ation codes : ure Modes : mum distance b mum distance b hole diameter /s hole depth (mm hor/rebar embed	alled Date : 9 CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)) Iment depth	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura f any separa ailure mode tion frame a er of fixing a	25 ; airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : Ind center of fixing and free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwar g (mm) n)	al wall SR = stor slab C = column er us effect on anchor rd from anchor/bar 320 480 20 160 160	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	olock anchor /bar nchor/bar



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001402 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project : -**Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y16 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Test	1 2 C C S C S C S S S S S S S S S S S S S				Measured Re	sults			
Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	34	0.0	0.00	0.00	0.00	Р	
2		10.1	0.5	10.1	0.18	0.00	0.09	P	
3		20.1	0.5	20.1	0.19	0.01	0.10	P	
4		30.2	0.5	30.2	0.22	0.03	0.13	P	
5		40.2	0.5	40.2	0.24	0.11	0.18	P	
6	CB	50.3	0.5	50.3	0.25	0.21	0.23	P	Hilti RE 100 +
7	CD	60.3	0.5	60.3	0.26	0.34	0.30	P	Y16 Grade
8		70.4	0.5	70.4	0.27	0.48	0.38	P	500B
9		80.4	0.5	80.4	0.28	0.58	0.43	P	
10		90.5	0.5	90.5	0.28	0.72	0.50	P	
11		100.5	0.5	100.5	0.28	0.97	0.63	P	
12		110.6	-	108.6	0.29	1.78	1.04	F4	
13						1.10	1.04	1 4	
	C) Loc	ation codes :	CO = corride	or ST = st	airway CE = cei	ling EW = extern	al wall SR = stor	e room	
	C) Loc D) Fail	ation codes : ure Modes :	CO = corridoMR = meterP = No signF2 = FailureF4 = Sign ofF5 = FailureF6 = Other fi	or ST = st. room IW = of failure in in structura any separa in structura ailure mode	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defon I member with cra (s) :	ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa	al wall SR = stor slab C = column er uus effect on ancho rd from anchor/bar	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar pr/bar	olock anchor /bar nchor/bar
	C) Loc D) Fail E) Mini	ation codes : ure Modes : mum distance b	CO = corridoMR = meterP = No signF2 = FailureF4 = Sign ofF5 = FailureF6 = Other fietween react	or ST = st. room IW = of failure in in structura any separa in structura ailure mode	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing	ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric tok radiates outwa	al wall SR = stor slab C = column er nus effect on ancho rd from anchor/bar	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar rr/bar	olock anchor /bar nchor/bar
	C) Loc D) Fail E) Mini F) Mini	ation codes : ure Modes : mum distance b mum distance b	CO = corridoMR = meterP = No signF2 = FailureF4 = Sign ofF5 = FailureF6 = Other fietween reactetween center	or ST = st. room IW = of failure in in structura any separa ailure mode tion frame a er of fixino a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing nd free edge (mo	ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric tock radiates outwa (mm)	al wall SR = stor slab C = column er l bus effect on ancho rd from anchor/bar 320 480	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar
	C) Loc D) Fail E) Mini F) Mini G) Drill	ation codes : ure Modes : mum distance b mum distance b hole diameter /s	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cento size (mm)	or ST = st. room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defon I member with cra (s) : nd center of fixing nd free edge (mm	ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric tick radiates outwa ti (mm)	al wall SR = stor slab C = column ar l bus effect on anchor rd from anchor/bar 320 480 20	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar
	C) Loc D) Fail E) Mini F) Mini G) Drill H) Drill	mum distance b mum distance b hole diameter /s hole depth (mm	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cento size (mm)	or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defon I member with cra (s) : nd center of fixing nd free edge (mn	ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric tock radiates outwa (mm) n)	al wall SR = stor slab C = column er l nus effect on anchor rd from anchor/bar 320 480 20	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar
	C) Loc D) Fail E) Mini F) Mini G) Drill H) Drill I) Ancl	ation codes : ure Modes : mum distance b mum distance b hole diameter /s hole depth (mm hor/rebar embed	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cento size (mm)) ment depth (or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defon I member with cra (s) : nd center of fixing nd free edge (mn	ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric tock radiates outwa (mm) n)	al wall SR = stor slab C = column er l nus effect on anchor rd from anchor/bar 320 480 20 160 160	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar
Information	C) Loc D) Fail E) Mini F) Mini G) Drill H) Drill I) Ancl n provided by	ation codes : ure Modes : mum distance b mum distance b hole diameter /s hole depth (mm hor/rebar embed customer	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cento size (mm)) ment depth (or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defon I member with cra (s) : nd center of fixing nd free edge (mn	ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric tock radiates outwa (mm) n)	al wall SR = stor slab C = column er l bus effect on anchor rd from anchor/bar 320 480 20 160 160	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor/bar nchor/bar



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001402 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : -Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y16 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 4

	1				Measured Re	sults			
Test Stage	Location Code	¹ Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		10.1	0.5	10.1	0.00	0.26	0.13	P	
3		20.1	0.5	20.1	0.00	0.28	0.14	Р	
4		30.2	0.5	30.2	0.00	0.37	0.19	P	
5		40.2	0.5	40.2	0.00	0.44	0.22	P	
6	CP	50.3	0.5	50.3	0.00	0.51	0.26	P	Hilti RE 100 ·
7	CB	60.3	0.5	60.3	0.01	0.54	0.28	P	Y16 Grade
8		70.4	0.5	70.4	-0.01	0.60	0.30	P	500B
9		80.4	0.5	80.4	-0.01	0.69	0.34	P	
10		90.5	0.5	90.5	-0.01	0.74	0.37	p	
11		100.5	0.5	100.5	-0.01	0.85	0.42	P	
12		110.6	-	110.2	-0.03	1.62	0.80	F4	
13							0.00		
	D) F E) M F) M	Failure Modes : Minimum distance b	MR = meter $P = No sign$ $F2 = Failure$ $F4 = Sign o$ $F5 = Failure$ $F6 = Other l$ between read	or on Table of failure in a In structura f any separa a In structura failure mode tion frame a er of fixing a	= Internal wall B anchor/bar and/c al member in a sh ation, plastic defor al member with cra e(s) : and center of fixing and free edge (mr	= beam F = floor or structural membrear cone mation or deleteric ack radiates outwa g (mm) n)	stab C = column er ous effect on anchor ard from anchor/bar 320 480	CB = concrete t CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar
	(G) L		size (mm)				20		
	L 	vnii hole depth (mm	1) 1				160		
	1) P	Inchor/rebar embed	ament depth	(mm)			160		
Informatio	on provided	by customer							
Tested D			<	٨				4	

Checked By

Approved Signatory

:

LAU SUN HUNG, IVAN : Senior Testing Manager

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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001402 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project 1 -Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y16 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Tost	A CONTRACTOR OF THE OWNER				Measured Re	sults			
Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0		0.0	0.00	0.00	0.00	P	
2		10.1	0.5	10.1	0.01	0.00	0.01	P	
З		20.1	0.5	20.1	0.13	0.00	0.07	P	
4		30.2	0.5	30.2	0.25	-0.01	0.12	P	
5		40.2	0.5	40.2	0.37	-0.03	0.17	P	
6	CP	50.3	0.5	50.3	0.50	-0.04	0.23	P	Hilti RE 100 +
7	CD	60.3	0.5	60.3	0.59	-0.05	0.27	P	Y16 Grade
8		70.4	0.5	70.4	0.69	-0.07	0.31	P	500B
9		80.4	0.5	80.4	0.81	-0.08	0.37	P P	
10		90.5	0.5	90.5	0.96	-0.08	0.07		
11		100.5	0.5	100.5	1.06	-0.08	0.44		
12		110.2	-	109.8	1.85	0.08	0.43	F	
13				100.0	1.00	0.00	0.97	Г4	
	C) Loc	ation codes :	CO = corrido MR = meter	or ST = st room IW =	alrway CE = ceil Internal wall B	ling EW = extern = beam F = floor	al wall SR = stor	re room CB = concrete b	Nock
	C) Loc D) Faif	ation codes : ure Modes :	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi	or ST = st room IW = of failure in in structura any separa in structura ailure mode	airway CE = cei = Internal wall B = anchor/bar and/o I member in a she tion, plastic deform I member with cra (s) :	ling EW = extern = beam F = floor r structural member ear cone mation or deleterio ack radiates outwar	al wall SR = stor slab C = column er us effect on ancho rd from anchor/bar	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar nchor/bar
	C) Loc D) Faif E) Mini	mun distance b	CO = corride MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react	or ST = st. room IW = of failure in in structura any separa ailure mode tion frame a	airway CE = cei Internal wall B anchor/bar and/oi I member in a she tion, plastic defori I member with cra (s): nd center of fixing	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwar g (mm)	al wall SR = stor slab C = column er l us effect on ancho rd from anchor/bar 320	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar nchor/bar
	C) Loc D) Fail E) Mini F) Mini	mum distance b mum distance b	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react	or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei Internal wall B anchor/bar and/o I member in a she tion, plastic deford I member with cra (s) : nd center of fixing nd free edge (mm	ling EW = extern = beam F = floor r structural member ear cone mation or deleterio ack radiates outwar g (mm) n)	al wall SR = stor slab C = column er us effect on anchor rd from anchor/bar 320 480	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar nchor/bar
	C) Loc D) Fail E) Mini F) Mini G) Drill	mum distance b mum distance b hole diameter /s	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cento ize (mm)	or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei Internal wall B anchor/bar and/o I member in a she tion, plastic deford I member with cra (s) : nd center of fixing nd free edge (mm	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwar ((mm) n)	al wall SR = stor slab C = column er us effect on anchor rd from anchor/bar 320 480 20	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar nchor/bar
	C) Loc D) Fail F) Mini G) Drill H) Drill	mum distance b mum distance b hole diameter /s hole depth (mm	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween center ize (mm)	or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing nd free edge (mm	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio tok radiates outwar (mm)	al wall SR = stor slab C = column er us effect on anchor rd from anchor/bar 320 480 20 160	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar nchor/bar
	C) Loc D) Fail F) Mini G) Drill H) Drill I) Ancl	mum distance b mum distance b mum distance b hole diameter /s hole depth (mm hor/rebar embed	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cento ize (mm)) ment depth (or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei Internal wall B anchor/bar and/o I member in a she tion, plastic deford I member with cra (s) : nd center of fixing nd free edge (mm	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwar ((mm) n)	al wall SR = stor slab C = column er us effect on anchor rd from anchor/bar 320 480 20 160 160	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar nchor/bar
Information	C) Loc D) Fail E) Mini F) Mini G) Drill H) Drill I) Ancl	mum distance b mum distance b mum distance b hole diameter /s hole depth (mm hor/rebar embed	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween center ize (mm)) ment depth (or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei Internal wall B anchor/bar and/o I member in a she tion, plastic deford tion, plastic deford i member with cra (s) : nd center of fixing nd free edge (mm	ling EW = extern = beam F = floor r structural member ear cone mation or deleterio ick radiates outwar (mm) n)	al wall SR = stor slab C = column er us effect on anchor rd from anchor/bar 320 480 20 160 160	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar nchor/bar

GEOTECHNICS & CONCRETE ENGINEERING (H.K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034







GEOTECHNICS & CONCRETE ENGINEERING (H. K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034 香港土力混凝土工程有限公司 九龍紅磡高山道六號地下 電話:852-2365 9123

TEST REPORT

HILTI (Hong Kong) Ltd

701-704, 7/F, Tower A, Manulife Financial Center, 223 Wai Yip Street, Kwun Tong, Kowloon

Tensile Proof Load Test on Anchor

Anchor Type : Hilti RE100 + Y20 Grade 500B

(Sample 1 to Sample 5)

Ref. Standard : BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3

Checked by: Technical Officer

Approved Signatory: _

LAU SUN HUNG, MAN Senior Testing Manager

Issued Date: 12-Oct-2017

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Report No. GCD171001444

GEOTECHNICS & CONCRETE ENGINEERING (H.K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034

1.0 Information



(a) Manufacturer	:	Hilti (Hong Kong) Ltd
(b) Chemical grout	:	Hilti RE100
(c) Rebar size and type	:	Y20 Grade 500B
(d) Mass concrete size	:	1200 mm x 1200mm x 400mm
(e) Concrete grade	:	C25
(f) Drill hole diameter	:	25 mm
(g) Drill hole depth	•	200 mm
(h) Rebar embedment c	lepth	: 200 mm
(i) Test standard	: BS	5080 : Part 1 : 1993 cl 6, 7.1.1 & 7.1.3
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(j) Minimum distance between reaction frame and center of the fixing : 400 mm

(k) Minimum distance between the center of fixing and free edge : 600 mm

2.0 Test results

Anchor Type	Hilti RE100 + Y20 Grade 500B				
Sample ID	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Failure load (kN)	168.3	170.2	166.4	170.5	168.1
Failure mode	F4	F4	F4	F4	F4
Average failure load (kN)	168.7				
Standard deviation (kN)	1.68				

Failure mode

P = No sign of failure in anchor/bar and/or structural member

- F1 = Breaking of anchor /bar
- F2 = Failure in structural member in a shear cone
- F3 = Pull out of anchor/bar
- F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar
- F5 = Failure in structural member with crack radiates outward from anchor/bar
- F6 = Other failure mode(s) :

Issued Date: 12-Oct-2017


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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001444 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : 2 Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y20 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 1

Test	Location Code	n Specified Farm		Measured Results					
Stage		Code Force (kN) (Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		15.7	0.5	15.7	0.00	0.00	0.00	Р	
3		31.4	0.5	31.4	0.00	0.00	0.00	Р	
4	СВ	47.1	0.5	47.1	0.00	0.00	0.00	Р	
5		62.8	0.5	62.8	0.09	0.00	0.05	P	
6		78.5	0.5	78.5	0.14	0.00	0.07	P	Hilti RE 100 -
7		94.2	0.5	94.2	0.19	0.00	0.10	P	Y20 Grade
8		110.0	0.5	110.0	0.21	0.00	0.11	Р	500B
9		125.7	0.5	125.7	0.24	0.08	0.16	P	
10		141.4	0.5	141.4	0.26	0.15	0.21	P	
11		157.1	0.5	157.1	0.36	0.32	0.34	P	
12		172.8	-	168.3	0.50	0.57	0.54	F4	
13								1.54	
Notae :									
Notes :	A) St B) Ar C) Lo D) Fa	ructural member : hchor /Rebar Insta cation codes : ilure Modes :	illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura any separa in structura	25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio tock radiates outwa	B days nal wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar r/bar	olock anchor /bar achor/bar
Notes :	A) St B) Ar C) Lo D) Fa	ructural member : achor /Rebar Insta cation codes : ilure Modes :	Illed Date : 9 CO = corride MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi	 Grade : C Oct 2017 ST = st room IW = of failure in in structura any separa in structura ailure mode 	25 :: alrway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) :	2. Age at test : ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa	8 days nal wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	block anchor /bar lichor/bar
Notes :	A) St B) Ar C) Lo D) Fa	ructural member : achor /Rebar Insta cation codes : ilure Modes : nimum distance b	illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween reac	 Grade : C Oct 2017 ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a 	25 :: airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defori I member with cra (s) : nd center of fixing	2. Age at test : 2 ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric lick radiates outwa g (mm)	8 days nal wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar 400	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	olock anchor /bar achor/bar
Notes :	A) St B) Ar C) Lc D) Fa E) Mi F) Mi	ructural member : achor /Rebar Insta cation codes : ilure Modes : nimum distance b nimum distance b	Illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cento	1. Grade : C Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	25 ;: alrway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defori I member with cra (s) : nd center of fixing and free edge (mm	2. Age at test : 2 ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric ick radiates outwa g (mm) n)	B days nal wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 400 600	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	olock anchor /bar achor/bar
Notes :	A) St B) Ar C) Lc D) Fa E) Mi F) Mi G) Dr	ructural member : nchor /Rebar Insta cation codes : ilure Modes : nimum distance b nimum distance b li hole diameter /s	illed Date : 9 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween reac etween cento size (mm)	 Grade : C Oct 2017 ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a ar of fixing a 	25 :: airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwa (mm) n)	8 days nal wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 400 600 25	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar r/bar	olock anchor /bar achor/bar
Notes :	A) St B) Ar C) Lo D) Fa E) Mi F) Mi G) Dr H) Dri	ructural member : nchor /Rebar Insta cation codes : ilure Modes : nimum distance b nimum distance b Il hole diameter /s Il hole depth (mm	Illed Date : 9 CO = corride MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween reac etween cento size (mm)	 Grade : C Oct 2017 ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a 	25 :: alrway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing and free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural member ear cone mation or deleterio tock radiates outwa (mm) n)	8 days nal wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 400 600 25 200	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar r/bar	olock anchor /bar achor/bar

Tested By

Checked By :



Approved Signatory

LAU SUN HUNG, IVAN

: Senior Testing Manager



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001444 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project 1.14 **Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y20 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

	1252 63				Measured Re	sults				
Test Stage	Locatio Code	n Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*	
1		0.0	-	0.0	0.00	0.00	0.00	P		
2		15.7	0.5	15.7	0.00	0.00	0.00	P		
3		31.4	0.5	31.4	0.00	0.00	0.00	P		
4		47.1	0.5	47.1	0.00	0.00	0.00	P		
5	1	62.8	0.5	62.8	0.01	0.00	0.01	P		
6	СВ	78.5	0.5	78.5	0.02	0.00	0.01	P	Hilti RE 100 +	
7		94.2	0.5	94.2	0.13	0.06	0.10	P	Y20 Grade	
8		110.0	0.5	110.0	0.16	0.15	0.16	P	500B	
9		125.7	0.5	125.7	0.23	0.24	0.24	P		
10		141.4	0.5	141.4	0.30	0.33	0.32	P		
11		157.1	0.5	157.1	0.37	0.43	0.02	P		
12		172.8	-	170.2	0.58	0.66	0.40	E4		
13					0.00	0.00	0.02	14		
	D)	Failure Modes :	MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f	room IW : of failure in in structura f any separa in structura failure mode	V = Internal wall B = beam F = floor slab C = colum in anchor/bar and/or structural member ural member in a shear cone aration, plastic deformation or deleterious effect on anc ural member with crack radiates outward from anchor/b de(s):			mn CB = concrete block F1 = Breaking of anchor /bar F3 = Pull out of anchor/bar ichor/bar /bar		
	E) I	Minimum distance b	etween reac	tion frame a	and center of fixing	g (mm)	400			
	F)	Minimum distance b	etween cent	er of fixing a	and free edge (mn	n)	600			
	G) I	Drill hole diameter /	size (mm)				25			
	H) (Drill hole depth (mm	1)				200			
	I) /	Anchor/rebar embed	dment depth	(mm)			200			
Informatio	n provideo	I by customer								
Tested By	y :	K.K	K. Wong		,	Approved Signal	tory :	AU SUN HUNG	3 IVAN	
Checked	By :		4		F	Post	: \$	Senior Testing N	Manager	



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 CI. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001444 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : -Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y20 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Teet	COMPANY AND	ocation a virit	ocation o w .		Measured Results					
Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*	
1		0.0	-	0.0	0.00	0.00	0.00	Р		
2		15.7	0.5	15.7	0.00	0.00	0.00	P		
3		31.4	0.5	31.4	0.00	0.00	0.00	Р		
4		47.1	0.5	47.1	0.00	0.00	0.00	Р		
5		62.8	0.5	62.8	0.09	0.00	0.05	P		
6	CP	78.5	0.5	78.5	0.15	0.05	0.10	P	Hilti RE 100 +	
7	СВ	94.2	0.5	94.2	0.19	0.18	0.19	P	Y20 Grade	
8		110.0	0.5	110.0	0.23	0.22	0.23	P	200B	
9		125.7	0.5	125.7	0.26	0.25	0.26	P		
10		141.4	0.5	141.4	0.31	0.30	0.31	Р		
11		157.1	0.5	157.1	0.35	0.34	0.35	P		
12		172.8	-	166.4	0.71	0.65	0.68	F4		
13										
	-)	Anchor /Rebar Installed Date Location codes : CO = co MR = m Failure Modes : P = No : F2 = Fa		0012017						
	C) Loc D) Fai	cation codes :	CO = corrid MR = meter P = No sign F2 = Failure	or ST = st room IW of failure in	airway CE = cei = Internal wall B anchor/bar and/o al member in a she	iling EW = exterr = beam F = floor or structural membr ear cone	nal wall SR = sto slab C = column er	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar	olock anchor /bar nchor/bar	
	C) Loc	Luce Modes :	CO = corridMR = meterP = No signF2 = FailureF4 = Sign oF5 = FailureF6 = Other f	or ST = st room IW of failure in in structure f any separa all in structure	airway CE = cei = Internal wall B anchor/bar and/o al member in a sha ation, plastic defor al member with cra e(s) :	iling EW = extern = beam F = floor or structural membrear cone mation or deleterio ack radiates outwa	nal wall SR = sto slab C = column er ous effect on ancho rd from anchor/bar	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar	
	C) Loc D) Fai	imum distance b	CO = corrid $MR = meter$ $P = No sign$ $F2 = Failure$ $F4 = Sign o$ $F5 = Failure$ $F6 = Other f$ $retween reactions$	or ST = st room IW of failure in in structura f any separa a in structura failure mode	airway CE = cei = Internal wall B anchor/bar and/o al member in a she ation, plastic defor al member with cra e(s) : and center of fixing	iling EW = extern = beam F = floor or structural membe ear cone mation or deleterio ack radiates outwa g (mm)	nal wall SR = sto slab C = column er ous effect on ancho rd from anchor/bai 400	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar	
	C) Loc D) Fai E) Mir F) Mir	imum distance b	CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign or F5 = Failure F6 = Other f between reactions	or ST = st room IW of failure in in structura f any separa a in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o al member in a sho ation, plastic defor al member with cra e(s) : and center of fixing and free edge (mr	iling EW = extern = beam F = floor or structural membre ear cone mation or deleteric ack radiates outwa g (mm) n)	nal wall SR = sto slab C = column er bus effect on ancho rd from anchor/bar 400 600	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar	
	E) Mir F) Mir G) Dril	imum distance b imum distance b imum distance b	CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign o F5 = Failure F6 = Other f between reac between cent size (mm)	or ST = st room IW of failure in any separa a in structure failure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o al member in a she ation, plastic defor al member with cra e(s) : and center of fixing and free edge (mr	iling EW = extern = beam F = floor or structural membrear cone mation or deleteric ack radiates outwa g (mm) n)	nal wall SR = sto slab C = column er ous effect on ancho rd from anchor/bar 400 600 25	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar	
	C) Loc D) Fai F) Mir G) Dril H) Dril	imum distance b imum distance b imum distance b imum distance b I hole diameter /:	CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign or F5 = Failure F6 = Other f between reac between cent size (mm)	or ST = st room IW of failure in in structura f any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o al member in a she ation, plastic defor al member with cra e(s) : and center of fixing and free edge (mr	iling EW = extern = beam F = floor or structural membrear cone mation or deleterio ack radiates outwa g (mm) n)	nal wall SR = sto slab C = column er ous effect on anchor rd from anchor/bar 400 600 25 200	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar	
	E) Mir E) Mir F) Mir G) Dril H) Dril I) Anc	imum distance b imum distance b imum distance b I hole diameter /: I hole depth (mm chor/rebar embed	CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign o F5 = Failure F6 = Other f between reac between cent size (mm)	or ST = st room IW in structura f any separa a in structura failure mode tion frame a er of fixing a (mm)	airway CE = cei = Internal wall B anchor/bar and/o al member in a she ation, plastic defor al member with cra- e(s) : and center of fixing and free edge (mr	iling EW = extern = beam F = floor or structural membre ear cone mation or deleteric ack radiates outwa g (mm) n)	nal wall SR = sto slab C = column er ous effect on anchor rd from anchor/bar 400 600 25 200 200	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor/bar nchor/bar	
nformatic	E) Mir D) Fai F) Mir G) Dril H) Dril I) And	imum distance b imum distance b imum distance b I hole diameter // I hole depth (mm chor/rebar embed v customer	CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign or F5 = Failure F6 = Other f between reac between cent size (mm) h) dment depth	or ST = st of failure in in structura f any separa in structura failure mode tion frame a er of fixing a (mm)	airway CE = cei = Internal wall B anchor/bar and/o al member in a she atton, plastic defor al member with cra e(s) : and center of fixing and free edge (mr	iling EW = extern = beam F = floor or structural membrear cone mation or deleteric ack radiates outwa g (mm) n)	nal wall SR = sto slab C = column er ous effect on anchor rd from anchor/bar 400 600 25 200 200	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar	
nformatic	C) Loo D) Fai F) Mir G) Dril H) Dril I) And	imum distance b imum distance b imum distance b I hole diameter /: I hole depth (mm :hor/rebar embed y customer	CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign or F5 = Failure F6 = Other f between reac between cent size (mm) h) dment depth	or ST = st of failure in in structura f any separa in structura failure mode tion frame a er of fixing a (mm)	airway CE = cei = Internal wall B anchor/bar and/o al member in a she ation, plastic defor al member with cra- e(s) : and center of fixing and free edge (mr	iling EW = extern = beam F = floor or structural membe ear cone mation or deleterio ack radiates outwa g (mm) n)	nal wall SR = sto slab C = column er ous effect on anchor rd from anchor/bar 400 600 25 200 200	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar	
<u>nformatic</u> Tested By	C) Loo D) Fai E) Mir F) Mir G) Dril H) Dril I) And n provided b	imum distance t imum distance t imum distance t imum distance t I hole diameter /: I hole depth (mm chor/rebar embed y customer K.k	CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign or F5 = Failure F6 = Other f between reac between cent size (mm) i) dment depth	or ST = sl room IW = of failure in in structura f any separa in structura failure mode tion frame a er of fixing a (mm)	airway CE = cei = Internal wall B anchor/bar and/o al member in a she ation, plastic defor al member with cra- e(s) : and center of fixing and free edge (mr	iling EW = extern = beam F = floor or structural membrear cone mation or deleterid ack radiates outwa g (mm) n)	tory :	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar	



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001444 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : -Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y20 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Test Lo Stage C 1 2	Code	Spacified			measureu ne	suits			
1 2 2		Test Force	Force Holding Time	Applied Forced	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes	Туре*
1 2 2		(kN)	(min)	(kN)				(see note D)	
2		0.0	-	0.0	0.00	0.00	0.00	Р	
2		15.7	0.5	15.7	0.00	0.00	0.00	P	
3		31.4	0.5	31.4	0.00	0.00	0.00	Р	
4		47.1	0.5	47.1	0.00	0.00	0.00	P	
5		62.8	0.5	62.8	0.00	0.05	0.03	Р	
6	CB	78.5	0.5	78.5	0.00	0.10	0.05	P	Hilti RE 100 -
7	CD	94.2	0.5	94.2	0.06	0.13	0.10	P	Y20 Grade
8		110.0	0.5	110.0	0.16	0.15	0.16	P	500B
9		125.7	0.5	125.7	0.21	0.20	0.21	P	
10		141.4	0.5	141.4	0.25	0.24	0.25	P	
11		157.1	0.5	157.1	0.31	0.30	0.31	P	
12		172.8	-	170.5	0.64	0.60	0.62	F4	
13							0.02		
) Faile	MR = meter room IW = Internal wal Failure Modes : P = No sign of failure in anchor/bar a F2 = Failure in structural member in F4 = Sign of any separation, plastic o F5 = Failure in structural member wit F6 = Other failure mode(s) : Minimum distance between reaction frame and center of Minimum distance between center of fixing and free edge				= beam F = floor	slab C = column	CB = concrete b	block
D E) F) G	E) Mini F) Mini G) Drill	ure Modes : mum distance b mum distance b hole diameter /s	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween centu ize (mm)	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	 Internal wall B anchor/bar and/o I member in a she tion, plastic defori I member with crain (s): Ind center of fixing and free edge (mm 	= beam F = floor r structural membe ear cone mation or deleterio ick radiates outwar (mm) n)	slab C = column er ous effect on ancho rd from anchor/bar 400 600 25	CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar achor/bar
D E; F) G; H)	E) Mini F) Mini S) Drill I) Drill	ure Modes : mum distance b hole diameter /s hole depth (mm	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween centu ize (mm)	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	 Internal wall B anchor/bar and/o I member in a she tion, plastic defort I member with cra (s) : nd center of fixing und free edge (mm) 	= beam F = floor r structural membe ear cone mation or deleterio lick radiates outwar (mm))	slab C = column ar ous effect on ancho rd from anchor/bar 400 600 25 200	CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor/bar ichor/bar
D E F) G H) I)	E) Mini F) Mini S) Drill I) Drill) Ancl	mum distance b mum distance b hole diameter /s hole depth (mm ror/rebar embed	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween centu ize (mm)) ment depth	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	 Internal wall B: anchor/bar and/o I member in a she tion, plastic defort I member with cra (s) : nd center of fixing Ind free edge (mm) 	= beam F = floor r structural membe ear cone mation or deleterio tock radiates outwa (mm) n)	slab C = column er bus effect on anchor rd from anchor/bar 400 600 25 200 200	CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	olock anchor /bar achor/bar
D E) G) H) I) nformation pro	E) Mini F) Mini F) Drill I) Drill) Anct	ure Modes : mum distance b hole diameter /s hole depth (mm nor/rebar embed customer	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween centr ize (mm)) ment depth	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a (mm)	 Internal wall B anchor/bar and/o I member in a she tion, plastic defori I member with cra (s) : nd center of fixing ind free edge (mm) 	= beam F = floor r structural membe ear cone mation or deleterio lock radiates outwa (mm) 1)	slab C = column ar ous effect on ancho rd from anchor/bar 400 600 25 200 200	CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor/bar ichor/bar
D F) G; H) I) Information pro	E) Mini F) Mini B) Drill I) Drill) Anch Dvided by	ure Modes : mum distance b hole diameter /s hole depth (mm hor/rebar embed customer K.K	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween centu ize (mm)) ment depth	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a (mm)	Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mm)	= beam F = floor r structural membe ear cone mation or deleterio tok radiates outwa (mm) n)	slab C = column er bus effect on ancho rd from anchor/bar 400 600 25 200 200	CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor/bar ichor/bar



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001444 Date of Issue : 12-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : -**Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y20 Grade 500B Date Tested : 11-Oct-17 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 5

Test	Location Code				Measured Re	sults			
Test Stage		Ode Force Applied Deformatic ode Force Time Forced (mm) (kN) (min) (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*		
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		15.7	0.5	15.7	0.00	0.00	0.00	Р	
3		31.4	0.5 31.4 0.00 0.00	0.00	Р				
4		47.1	0.5	47.1	0.00	0.00	0.00	Р	
5	СВ	62.8	0.5	62.8	0.00	0.08	0.04	P	
6		78.5	0.5	78.5	0.00	0.18	0.09	P	Hilti RE 100 ·
7		94.2	0.5	94.2	0.00	0.23	0.12	P	Y20 Grade
8		110.0	0.5	110.0	0.00	0.29	0.15	P	500B
9		125.7	0.5	125.7	0.08	0.32	0.20	P	
10		141.4	0.5	141.4	0.15	0.35	0.25	P	
11		157.1	0.5	157.1	0.32	0.41	0.37	P	
12		172.8	-	168.1	0.57	0.73	0.65	F4	
13						0.000	0100	4 4	
	 B) A C) La D) Fa E) M F) M G) Di H) Di 	nchor /Rebar Insta ocation codes : ailure Modes : inimum distance b inimum distance b rill hole diameter /s iill hole deoth (mm	alled Date : 9 CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f between react between cent size (mm)	Oct 2017 or ST = st room IW of failure in in structura f any separa in structura failure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o al member in a she ation, plastic defor al member with cra a(s) : and center of fixing and free edge (mn	ling EW = exterr = beam F = floor or structural membre ear cone mation or deleteric ack radiates outwa g (mm) n)	nal wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar 400 600 25 200	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar
	11) DI	in note depth (min					200		
	I) Ar	nchor/rebar embed	iment depth	(mm)			200		
Informatio	n provided	by customer							
Tested P	, .	КК	Mong	h				Ċ	/

Checked By

LAU SUN HUNG, IVAN : Senior Testing Manager



Issued date: 12 Oct 2017



GEOTECHNICS & CONCRETE ENGINEERING (H. K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034 香港土力混凝土工程有限公司 九龍紅磡高山道六號地下 電話:852-2365 9123

TEST REPORT

HILTI (Hong Kong) Ltd

701-704, 7/F, Tower A, Manulife Financial Center, 223 Wai Yip Street, Kwun Tong, Kowloon

Tensile Proof Load Test on Anchor

Anchor Type : Hilti RE100 + Y25 Grade 500B

(Sample 1 to Sample 5)

Ref. Standard : BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3

Checked by: Technical Officer

Approved Signatory:

LAU SUN HUNG, WAN Senior Testing Manager

Issued Date: 21-Oct-2017

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Report No. GCD171001410

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GEOTECHNICS & CONCRETE ENGINEERING (H.K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034

1.0 Information



(a) Manufacturer	:	Hilti (Hong Kong) Ltd
(b) Chemical grout	I	Hilti RE100
(c) Rebar size and type		Y25 Grade 500B
(d) Mass concrete size	:	1500 mm x 1500mm x 500mm
(e) Concrete grade	:	C25
(f) Drill hole diameter	:	30mm
(g) Drill hole depth	:	250mm
(h) Rebar embedment d	epth	: 250 mm
(i) Test standard	: BS	5080 : Part 1 : 1993 cl 6, 7.1.1 & 7.1.3
(i) Minimum distance be	twoo	proposition frame and contact fills fills

(j) Minimum distance between reaction frame and center of the fixing : 500 mm

(k) Minimum distance between the center of fixing and free edge : 750 mm

2.0 Test results

Anchor Type		Hilti RE	100 + Y25 Gra	de 500B	
Sample ID	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Failure load (kN)	258.8	261.2	264.5	262.8	265.2
Failure mode	F4	F4	F4	F4	F4
Average failure load (kN)			262.5		
Standard deviation (kN)			2.59		

Failure mode

P = No sign of failure in anchor/bar and/or structural member

F1 = Breaking of anchor /bar

F2 = Failure in structural member in a shear cone

F3 = Pull out of anchor/bar

F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar

F5 = Failure in structural member with crack radiates outward from anchor/bar

F6 = Other failure mode(s) :

Issued Date: 21-Oct-2017



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001410 Date of Issue : 21-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project : -Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y25 Grade 500B Date Tested : 18-10-2017 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 1

		The second second	di sa la		Measured Re	sults			
Test Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		24.5	0.5	24.5	0.00	0.00	0.00	Р	
3		49.1	0.5	49.1	0.05	0.00	0.03	Р	
4		73.6	0.5	73.6	0.12	0.05	0.09	Р	
5		98.2	0.5	98.2	0.18	0.11	0.15	Р	
6	СВ	122.7	0.5	122.7	0.23	0.19	0.21	Р	Hilti RE 100 +
7		147.2	0.5	147.2	0.29	0.26	0.28	P	Y25 Grade
8		171.8	0.5	171.8	0.35	0.34	0.35	P	200B
9		196.3	0.5	196.3	0.40	0.43	0.42	Р	
10		220.9	0.5	220.9	0.48	0.49	0.49	P	
11		245.4	0.5	245.4	0.58	0.63	0.61	P	
12		269.9	-	258.8	0.79	0.88	0.84	F4	
13						de batan pe			
	D) F	ailure Modes :	MR = meter P = No sign F2 = Failure F4 = Sign o F5 = Failure	r room IW n of failure in e in structura f any separa e in structura	 Internal wall B anchor/bar and/c al member in a sh ation, plastic defor al member with crisi 	= beam F = floor or structural memb ear cone rmation or deleterio ack radiates outwa	slab C = column er ous effect on anchor/ba	re room CB = concrete t F1 = Breaking of : F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar
			F6 = Other	failure mode	e(s):				
	E) M	inimum distance l	petween read	ction frame a	and center of fixin	g (mm)	500		
	F) M	inimum distance l	petween cen	ter of fixing	and free edge (mr	m)	750		
	G) D	rill hole diameter /	size (mm)				30		
	H) Di	rill hole depth (mr	n)				250		
	I) Ar	nchor/rebar embe	dment depth	(mm)			250		
Informatio	on provided	by customer							,
7				1.				L	
lested B	у :	K.I	K. Wong	A	1	Approved Signa	tory :		<
	7226		1	AL \				LAU SUN HUN	G, IVAN
Checked	By :	1	- A	94 \	1	Post	:	Senior Testing I	Manager



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001410 Date of Issue : 21-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : 4 Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y25 Grade 500B Date Tested : 18-10-2017 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 2

					Measured Re	sults				
Test Stage	Locatio Code	n Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*	
1		0.0		0.0	0.00					
1		0.0	-	0.0	0.00	0.00	0.00	P		
2		24.5	0.5	24.5	0.02	0.00	0.01	Р		
3		49.1	0.5	49.1	0.08	0.00	0.04	Р		
4	CP	73.6	0.5	73.6	0.15	0.01	0.08	Р		
5		98.2	0.5	98.2	0.23	0.09	0.16	Р		
6	CB	122.7	0.5	122.7	0.29	0.15	0.22	Р	Y25 Grade	
7		147.2	0.5	147.2	0.35	0.23	0.29	Р	500B	
8		171.8	0.5	171.8	0.41	0.31	0.36	Р		
9		196.3	0.5	196.3	0.46	0.37	0.42	Р		
10		220.9	0.5	220.9	0.52	0.45	0.49	Р		
11		245.4	0.5	245.4	0.56	0.58	0.57	Р		
12		269.9	-	261.2	0.78	0.81	0.80	F4		
13								647 - 235 F		
Notes :	A) B) C)	Structural member Anchor /Rebar Insta Location codes :	: alled Date : 1 CO = corrid MR = meter	1. Grade : 0 6 Oct 2017 or ST = st	25 airway CE = cel	2. Age at test : : lling EW = extern = beam F = floor	5 days nal wall SR = sto slab C = column	re room	slock	
	D)	Failure Modes :	P = No sign	of failure in	anchor/bar and/o	r structural membe	er	F1 = Breaking of :	anchor /bar	
			F2 = Failure	in structura	I member in a shi	ear cone		F1 = Breaking of anchor /bar		
			F4 = Sian o	f any separa	tion, plastic defor	mation or deleterio	ous effect on anch	n/bar	ionon bai	
			F5 = Failure	in structura	I member with cra	ack radiates outwa	rd from anchor/ba			
			F6 = Other i	ailure mode	(s):		a nom anonomoa			
	E)	Minimum distance b	petween read	tion frame a	and center of fixing	n (mm)	500			
	F) 1	Minimum distance h	etween cent	er of fixing	and free edge (mg	n)	750			
	G) I	Drill hole diameter /	size (mm)		nee ooge (mi		, 30			
		twis sterrister /								

Anchor/rebar embedment depth (mm)

Information provided by customer

Tested By

Checked By



Approved Signatory

LAU SUN HUNG, WAN

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: Senior Testing Manager



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001410 Date of Issue : 21-10-2017 : Hilti (Hong Kong) Ltd Client Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : -Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y25 Grade 500B Date Tested : 18-10-2017 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

Sample ID : Sample 3

					Measured Re	sults				
Test Stage	Code	Code	n Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	P		
2		24.5	0.5	24.5	0.00	0.00	0.00	P		
3		49.1	0.5	49.1	0.01	0.00	0.01	Р		
4		73.6	0.5	73.6	0.08	0.05	0.07	Р		
5	СВ	98.2	0.5	98.2	0.15	0.10	0.13	Р		
6		122.7	0.5	122.7	0.22	0.15	0.19	Р	Hilti RE 100 -	
7		147.2	0.5	147.2	0.29	0.19	0.24	Р	Y25 Grade	
8		171.8	0.5	171.8	0.36	0.24	0.30	Р	200B	
9		196.3	0.5	196.3	0.44	0.29	0.37	Р		
10		220.9	0.5	220.9	0.51	0.33	0.42	P		
11		245.4	0.5	245.4	0.62	0.39	0.51	Р		
12		269.9	1 	264.5	0.91	0.56	0.74	F4		
13										
	B) C) D) F) I G) I H) I	Anchor /Rebar Insta Location codes : Failure Modes : Minimum distance t Minimum distance t Drill hole diameter / Drill hole diameter / Drill hole diameter /	alled Date : 1 CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign o F5 = Failure F6 = Other 1 between reac between cent size (mm)	6 Oct 2017 or ST = st room IW 6 in structure f any separa 6 in structure failure mode stion frame a ter of fixing a	airway CE = cei = Internal wall B anchor/bar and/c al member in a sh ation, plastic defor al member with cra a(s) : and center of fixing and free edge (mr	iling EW = extern = beam F = floor or structural membrear cone mation or deleterid ack radiates outwa g (mm) n)	nal wall SR = sto slab C = column er ous effect on ancho and from anchor/bas 500 750 30	re room CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar	
	1)	Anghor/robor ombor	'/ Imont donth	(250			
nformatio	n providec	by customer	ament deptn	(mm)			250	/		
Tested By	/ :	K.k	(. Wong	\mathbb{A}	,	Approved Signa	tory : _		G, IVAN	

Checked By

HIT-RE100 Epoxy Anchor (Post-Installed Rebar)

Post

: Senior Testing Manager

: GCD171001410

: Hilti (Hong Kong) Ltd



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Date of Issue : 21-10-2017 : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon

			And the second se
Project			
Test Location	: Workshop at Yick Yuen Tsuen		
Anchor Type	: Hilti RE 100 + Y25 Grade 500B	Date Tested	: 18-10-2017
GCE Reg. No.	: GCE171990	Test Unit No.	: MI17182

Sample ID : Sample 4

Report No.

Client

Address

					Measured Re	sults			
Test Stage	Code	n Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		24.5	0.5	24.5	0.01	0.00	0.01	Р	
3		49.1	0.5	49.1	0.07	0.00	0.04	Р	
4		73.6	0.5	73.6	0.13	0.00	0.07	Р	
5		98.2	0.5	98.2	0.19	0.01	0.10	Р	
6	CB	122.7	0.5	122.7	0.25	0.03	0.14	Р	Hilti RE 100 +
7	CD	147.2	0.5	147.2	0.35	0.11	0.23	Р	Y25 Grade
8		171.8	0.5	171.8	0.45	0.21	0.33	Р	2008
9		196.3	0.5	196.3	0.54	0.29	0.42	Р	
10		220.9	0.5	220.9	0.63	0.41	0.52	Р	
11		245.4	0.5	245.4	0.72	0.63	0.68	Р	
12		269.9	-	262.8	0.98	0.85	0.92	F4	
	D)	Anchor /Rebar Insta Location codes : Failure Modes :	alled Date : 1 CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign o F5 = Failure	6 Oct 2017 for ST = st r room IW of failure in the in structura f any separa the in structura	lairway CE = ce = Internal wall B anchor/bar and/c al member in a sh ation, plastic defor al member with cr.	iling EW = extern = beam F = floor or structural membrear cone rmation or deleterio ack radiates outwa	nal wall SR = sto slab C = column er ous effect on ancho rd from anchor/ba	re room CB = concrete t F1 = Breaking of : F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar
			F6 = Other	failure mode	e(s):				
	E) I	Minimum distance t	between read	tion frame a	and center of fixin	g (mm)	500		
	F) I	Minimum distance b	between cen	ter of fixing a	and free edge (mr	m)	750		
	G) [Drill hole diameter /	size (mm)				30		
	H) [Drill hole depth (mm	٦)				250		
	I) /	Anchor/rebar ember	dment depth	(mm)			250		
Informatio	on provided	by customer							
								b	/

Checked By

Post

: Senior Testing Manager



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001410 Date of Issue : 21-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project : -Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y25 Grade 500B Date Tested : 18-10-2017 GCE Reg. No. : GCE171990 Test Unit No. : MI17182

3152911 (Y14C)					Measured Res	sults			
Test Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		24.5	0.5	24.5	0.00	0.01	0.01	Р	
3		49.1	0.5	49.1	0.00	0.07	0.04	Р	
4		73.6	0.5	73.6	0.04	0.12	0.08	Р	
5		98.2	0.5	98.2	0.13	0.15	0.14	Р	
6	CP	122.7	0.5	122.7	0.21	0.16	0.19	Р	Hilti RE 100 +
7	CD	147.2	0.5	147.2	0.29	0.20	0.25	P	Y25 Grade
8		171.8	0.5	171.8	0.39	0.25	0.32	P	200B
9		196.3	0.5	196.3	0.48	0.31	0.40	P	
10		220.9	0.5	220.9	0.60	0.38	0.49	P	
11		245.4	0.5	245.4	0.77	0.44	0.61	P	
12		269.9	-	265.2	1.02	0.74	0.88	F4	
13		and the second			1000	0.7.1	0.00		
			MR = meter	room IW	= Internal wall B	= beam F = floor	slab C = column	re room CB = concrete I	block
	D) Fail E) Min F) Min	lure Modes : imum distance b imum distance b	MR = meter P = No sign F2 = Failure F4 = Sign o F5 = Failure F6 = Other etween read	room IW of failure in in structura f any separa in structura failure mode stion frame a ter of fixing a	= Internal wall B anchor/bar and/o al member in a shi ation, plastic defor al member with cra a(s) : and center of fixing and free edge (mo	= beam F = floor r structural membre ear cone mation or deleteric ack radiates outwa g (mm)	slab C = column er ous effect on anche and from anchor/ba 500 750	re room CB = concrete H F1 = Breaking of a F3 = Pull out of ar or/bar	block anchor/bar nchor/bar
	D) Fail E) Min F) Min G) Drill	lure Modes : imum distance b imum distance b	MR = meter P = No sign F2 = Failure F4 = Sign o F5 = Failure F6 = Other f etween reac etween cent size (mm)	room IW of failure in in structura f any separa f any separa f any separa f any separa f any separa failure mode stion frame a ser of fixing a	= Internal wall B anchor/bar and/o al member in a sh- ation, plastic defor al member with cra a(s) : and center of fixing and free edge (mr	= beam F = floor r structural membre ear cone mation or deleteric ack radiates outwa g (mm) n)	slab C = column er bus effect on ancho ard from anchor/ba 500 750 30	re room CB = concrete k F1 = Breaking of : F3 = Pull out of ar or/bar	block anchor /bar nchor/bar
	D) Fail E) Min F) Min G) Drill H) Drill	lure Modes : imum distance b imum distance b I hole diameter /s	MR = meter $P = No sign$ $F2 = Failure$ $F4 = Sign o$ $F5 = Failure$ $F6 = Other f$ $etween reac$ $etween cent$ size (mm)	room IW of failure in a in structura f any separa failure mode failure mode stion frame a arr of fixing a	= Internal wall B anchor/bar and/o al member in a shi ation, plastic defor al member with cra e(s) : and center of fixing and free edge (mr	= beam F = floor r structural membre ear cone mation or deleteric ack radiates outwa g (mm) n)	slab C = column er bus effect on ancho ard from anchor/ba 500 750 30 250	re room CB = concrete t F1 = Breaking of : F3 = Pull out of ar or/bar	block anchor /bar nchor/bar
	D) Fail E) Min F) Min G) Drill H) Drill	lure Modes : imum distance b imum distance b I hole diameter /: I hole depth (mm chor/rebar ember	MR = meter $P = No sign$ $F2 = Failure$ $F4 = Sign o$ $F5 = Failure$ $F6 = Other factors are as the set of the set of$	room IW of failure in a in structura f any separa f any separa failure mode failure mode stion frame a ter of fixing a	= Internal wall B anchor/bar and/o al member in a shi ation, plastic defor al member with cra e(s) : and center of fixing and free edge (mr	= beam F = floor r structural membre ear cone mation or deleteric ack radiates outwa g (mm) n)	slab C = column er bus effect on anchor/ba ind from anchor/ba 500 750 30 250	re room CB = concrete ł F1 = Breaking of : F3 = Pull out of ar or/bar	block anchor /bar nchor/bar
Information	D) Fail E) Min F) Min G) Drill H) Drill I) And	lure Modes : imum distance b imum distance b I hole diameter /s I hole depth (mm :hor/rebar embed y customer	MR = meter P = No sign F2 = Failure F4 = Sign o F5 = Failure F6 = Other t etween read etween cent size (mm)) Iment depth	room IW of failure in a in structura f any separa in structura failure mode tion frame a tion frame a tion frame a (mm)	= Internal wall B anchor/bar and/o al member in a she ation, plastic defor al member with cra e(s) : and center of fixing and free edge (mr	= beam F = floor r structural membre ear cone mation or deleteric ack radiates outwa g (mm) n)	slab C = column er bus effect on anchor and from anchor/ba 500 750 30 250 250	re room CB = concrete ł F1 = Breaking of : F3 = Pull out of ar or/bar r	block anchor /bar nchor/bar

GEOTECHNICS & CONCRETE ENGINEERING (H.K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034



Report No : GCD171001410

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Hilti RE100 + Y25 Grade 500B

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HIT-RE100 Epoxy Anchor (Post-Installed Rebar)

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Apr 2024

Issued date: 21 Oct 2017



GEOTECHNICS & CONCRETE ENGINEERING (H. K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034 香港土力混凝土工程有限公司 九龍紅磡高山道六號地下 電話:852-2365 9123



HILTI (Hong Kong) Ltd

701-704, 7/F, Tower A, Manulife Financial Center, 223 Wai Yip Street, Kwun Tong, Kowloon

Tensile Proof Load Test on Anchor

Anchor Type : Hilti RE100 + Y32 Grade 500B

(Sample 1 to Sample 5)

Ref. Standard : BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3

Checked by: **Technical Officer**

Approved Signatory:

LAU SUN HUNG, WAN Senior Testing Manager

Issued Date: 27-Oct-2017

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Report No. GCD171001428

GEOTECHNICS & CONCRETE ENGINEERING (H.K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034

1.0 Information



(a) Manufacturer	:	Hilti (Hong Kong) Ltd
(b) Chemical grout	:	Hilti RE100
(c) Rebar size and type	:	Y32 Grade 500B
(d) Mass concrete size	:	1920 mm x 1920mm x 640mm
(e) Concrete grade	:	C25
(f) Drill hole diameter	:	40mm
(g) Drill hole depth	:	320mm
(h) Rebar embedment d	lepth	: 320 mm
(i) Test standard	: BS	5080 : Part 1 : 1993 cl 6, 7.1.1 & 7.1.3

(j) Minimum distance between reaction frame and center of the fixing : 640 mm

(k) Minimum distance between the center of fixing and free edge : 960 mm

2.0 Test results

Anchor Type	Hilti RE100 + Y32 Grade 500B								
Sample ID	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5				
Failure load (kN)	419.8	419.6	421.2	418.3	419.5				
Failure mode	F4	F4	F4	F4	F4				
Average failure load (kN)		1	419.7						
Standard deviation (kN)			1.03						

Failure mode

P = No sign of failure in anchor/bar and/or structural member

- F1 = Breaking of anchor /bar
- F2 = Failure in structural member in a shear cone
- F3 = Pull out of anchor/bar
- F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar

F5 = Failure in structural member with crack radiates outward from anchor/bar

F6 = Other failure mode(s) :

Issued Date: 27-Oct-2017



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001428 Date of Issue : 27-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project . . **Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y32 Grade 500B Date Tested : 25-10-2017 GCE Reg. No. : GCE172137 Test Unit No. : MI17203

Test Stage Location Code Specified Force (KN) Force (min) Applied Gauge 1 (min) Deformation Gauge 2 (min) Relative Gauge 2 (min) Failure Patronation Type* 1 0.0 - 0.0 0.00 0.00 0.00 P 2 40.2 0.5 40.2 0.00 0.00 0.00 P 3 80.4 0.5 80.4 0.00 0.00 0.00 P 4 120.7 0.5 120.7 0.00 0.00 0.00 P 7 CB 241.3 0.6 241.3 0.05 0.00 0.00 0.99 9 321.4 0.5 362.0 0.26 0.05 0.16 P 11 402.2 0.5 362.0 0.26 0.05 0.16 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13 - - - - 105 2.05 cortest 362.0 0.26						Measured Re	sults			
1 0.0 - 0.0 0.00 0.00 0.00 P 3 40.2 0.5 40.2 0.00 0.00 0.00 P 3 40.4 0.5 40.2 0.00 0.00 0.00 P 4 120.7 0.5 120.7 0.00 0.00 0.00 P 5 160.9 0.5 160.9 0.00 0.00 0.00 P 7 201.1 0.5 211.3 0.05 0.00 0.00 P 9 321.8 0.5 321.8 0.23 0.03 0.13 P 10 402.2 0.5 402.0 0.26 0.05 0.16 P 11 402.2 0.5 402.2 0.5 362.0 0.26 0.07 0.23 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13 In In In In	Test Stage	Location Code	n Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*
2 40.2 0.5 40.2 0.00 0.00 P 3 80.4 0.5 80.4 0.00 0.00 P 4 120.7 0.5 120.7 0.00 0.00 P 6 0.5 120.7 0.05 120.7 0.00 0.00 P 7 160.9 0.5 120.7 0.01 0.00 0.00 P 7 241.3 0.5 241.3 0.05 0.00 0.03 P 9 321.8 0.5 321.8 0.23 0.03 0.13 P 10 402.2 0.5 402.2 0.54 0.26 0.05 0.16 P 11 442.4 - 419.8 0.39 0.08 0.24 F4 13 - - 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7	1		0.0	-	0.0	0.00	0.00	0.00	Р	
3 80.4 0.5 80.4 0.00 0.00 0.00 P 5 160.9 0.5 160.9 0.00 0.00 0.00 P 7 6 201.1 0.5 120.7 0.00 0.00 0.00 P 7 6 201.1 0.5 201.1 0.01 P P 32 241.3 0.5 241.3 0.05 0.00 0.03 P 321.8 0.5 362.0 0.5 362.0 0.26 0.05 0.16 P 10 362.0 0.5 362.0 0.26 0.05 0.16 P 11 402.2 0.5 402.2 0.38 0.07 0.23 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13 - - 1.6rade : C25 2. Age at test: 8 days 8 Anchor /Rebar Installed Date: 20 Oct 2017 12 Lacation codes:	2		40.2	0.5	40.2	0.00	0.00	0.00	P	
4 120.7 0.5 120.7 0.00 0.00 0.00 P 5 160.9 0.5 160.9 0.00 0.00 0.00 P 7 201.1 0.5 201.1 0.01 0.00 0.01 P 8 201.1 0.5 201.1 0.01 0.00 0.01 P 9 281.5 0.5 241.3 0.5 0.03 0.13 P 10 362.0 0.5 362.0 0.26 0.05 0.16 P 11 402.2 0.5 402.2 0.38 0.07 0.23 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13 - - - - - - - 14 - - 10.7 2.4 -	3		80.4	0.5	80.4	0.00	0.00	0.00	P	
5 160.9 0.5 160.9 0.00 0.00 0.00 P Hill RE 100 7 241.3 0.5 241.3 0.05 0.00 0.03 P 9 321.8 0.5 241.3 0.05 0.03 0.13 P 10 362.0 0.5 362.0 0.26 0.05 0.16 P 11 402.2 0.5 402.2 0.38 0.07 0.23 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13 - - 42.4 - 419.8 0.39 0.08 0.24 F4 13 - - - - - - - - 14 -	4		120.7	0.5	120.7	0.00	0.00	0.00	P	
6 CB 201.1 0.5 201.1 0.01 0.00 0.01 P Hill RE 100 7 241.3 0.5 241.3 0.05 0.00 0.03 P 93 9 321.8 0.5 281.5 0.18 0.00 0.09 P 10 362.0 0.5 321.8 0.23 0.03 0.13 P 11 402.2 0.5 402.2 0.38 0.07 0.23 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13 Image: C25 2. Age at test: 8 days 6 concrete block Notes: A) Structural member: 1. Grade:: C25 2. Age at test: 8 days B) Anchor /Rebar Installed Date: 20 Oct 2017 C Location codes: C = colima CB = concrete block D) Failure Modes: P = No sign of failure in anchor/bar CB = colima CB = concrete block D F1 = Breaking of anchor /bar F2 = Failure in structural me	5		160.9	0.5	160.9	0.00	0.00	0.00	P	
7 CB 241.3 0.5 241.3 0.05 0.00 0.03 P 8 281.5 0.5 281.5 0.18 0.00 0.09 P 9 321.8 0.5 321.8 0.23 0.03 0.13 P 10 402.2 0.5 362.0 0.26 0.05 0.16 P 11 402.2 0.5 402.2 0.38 0.07 0.23 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13 - - - - - - - Notes : A) Structural member: 1. Grade: C25 2. Age at test: 8 days B) Anchor/Rebar Installed Date: 20 Oct 2017 C Location codes: C0 = corifdor ST = stimway CE = celling EW = external wall SR = store room MR = meter room MR = meter room F1 = Breaking of anchor/bar F2 = Failure in structural member in a shear cone F3 = Pull out of anchor/bar F2 =	6	CP	201.1	0.5	201.1	0.01	0.00	0.01	P	Hilti RE 100 +
8 281.5 0.6 281.5 0.18 0.00 0.09 P 9 321.8 0.5 321.8 0.23 0.03 0.13 P 10 362.0 0.5 362.0 0.26 0.05 0.16 P 11 362.0 0.5 362.0 0.26 0.05 0.16 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13 - - - - - - - Notes : A) Structural member: 1.Grade: C25 2. Age at test: 8 days B) Anchor /Rebar Installed Date: 20 Oct 2017 C) Location codes: C0 = corridor ST = stainvay CE = ceiling EW = external wall SR = store room MR = meter room WR = internorm WE internal wall B = beam F = floor slab C = column CB = concrete block D) Failure Modes: P = No sign of failure in anchor/bar and/or structural member F1 = Breaking of anchor/bar F2 = Failure in structural member with crack radiates outward from anchor/bar F3 = Pull out of anchor/bar F5 = Failure in structural member with crack radiates outward from anchor/bar F6 = Other failure mode(s): E) Minimum distance between reaction frame and center of fixing (mm) 640 F) Minimum distan	7	CB	241.3	0.5	241.3	0.05	0.00	0.03	P	Y32 Grade
9 321.8 0.5 321.8 0.23 0.03 0.13 P 10 362.0 0.5 362.0 0.26 0.05 0.16 P 11 402.2 0.5 402.2 0.38 0.07 0.23 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13 - - - - - - - Notes: A) Structural member: 1. Grade: C25 2. Age at test: 8 days B) Anchor /Rebar Installed Date: 20 Oct 2017 C Location codes: CO = corridor ST = stainway CE = ceiling EW = external wall SR = store room MR = meter room IW = Internal wall B = beam F = floor slab C = column CB = concrete block D) Failure Modes: P = No sign of failure in anchor/bar and/or structural member F3 = Pail out of anchor/bar F3 = Pailure in structural member in a shear cone F2 = Failure in structural member in a shear cone F3 = Failure in structural member with crack radiates outward from anchor/bar F3 = Pail out of anchor/bar F3 = F6 = Other failure mode(s) : E Minimum distance between center of fixing and free edge (mm) <t< td=""><td>8</td><td></td><td>281.5</td><td>0.5</td><td>281.5</td><td>0.18</td><td>0.00</td><td>0.09</td><td>P</td><td>500B</td></t<>	8		281.5	0.5	281.5	0.18	0.00	0.09	P	500B
10 362.0 0.5 362.0 0.26 0.05 0.16 P 11 402.2 0.5 402.2 0.38 0.07 0.23 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13 442.4 - 419.8 0.39 0.08 0.24 F4 13 0.08 0.24 F4 -	9		321.8	0.5	321.8	0.23	0.03	0.13	P	
11 402.2 0.5 402.2 0.38 0.07 0.23 P 12 442.4 - 419.8 0.39 0.08 0.24 F4 13	10		362.0	0.5	362.0	0.26	0.05	0.16	P	
12 141.2 0.00 0.00 0.01 0.23 P 13 13 0.08 0.08 0.24 F4 13 13 0.08 0.24 F4 13 13 0.08 0.24 F4 13 13 0.08 0.24 F4 14 13 0.08 0.24 F4 13 0.08 0.24 F4 14 13 0.08 0.24 F4 13 0.08 0.24 F4 14 13 0.08 0.24 F4 13 0.08 0.24 F4 13 0.08 0.24 F4 14 150 Date : 20 Oct 2017 C 1 Location codes : C0 = corridor ST = staiway CE = celiing EW = external wall SR = store room MR = meter room W = Internal wall B = beam F = floor stab C = column CB = concrete block D) Fa = Sign of any separation, plastic deformation or deleterious effect on anchor/bar F3 = Pull out of anchor/bar F5 = Failure in structural member with crack radiates outward from anchor/bar	11		402.2	0.5	402.2	0.38	0.07	0.23	P P	
13 13 13 0.00 0.24 14 13 13 0.00 0.24 14 14 15 0.00 0.24 14 13 16 0.24 14 14 13 16 0.24 14 14 14 16 0.24 14 14 14 16 16 16 16 16 15 16 16 16 16 16 16 16 16 16 16 16 16 16 16 17 16	12		442.4	-	419.8	0.39	0.08	0.24	EA.	
Notes : A) Structural member : 1. Grade : C25 2. Age at test : 8 days B) Anchor /Rebar Installed Date : 20 Oct 2017 C) Location codes : CO = coridor ST = stainway CE = ceiling EW = external wall SR = store room MR = meter room IW = Internal wall B = beam F = floor slab C = column CB = concrete block D) Failure Modes : P = No sign of failure in anchor/bar and/or structural member F1 = Breaking of anchor/bar F2 = Failure in structural member in a shear cone F3 = Pull out of anchor/bar F3 = Pull out of anchor/bar F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar F6 = Other failure mode(s) : E) E) Minimum distance between reaction frame and center of fixing (mm) 640 F) Minimum distance between center of fixing and free edge (mm) 960 G) Drill hole diameter /size (mm) 40 H) Drill hole depth (mm) 320 I) Anchor/rebar embedment depth (mm) 320 Information provided by customer LAU SUN HUNG, tvan Checked By : K.K. Wong Approved Signatory	13				110.0	0.00	0.00	0.24	F 4	
F6 = Other failure mode(s) : E) Minimum distance between reaction frame and center of fixing (mm) 640 F) Minimum distance between center of fixing and free edge (mm) 960 G) Drill hole diameter /size (mm) 40 H) Drill hole depth (mm) 320 I) Anchor/rebar embedment depth (mm) 320 Information provided by customer E Tested By : K.K. Wong Approved Signatory : LAU SUN HUNG, TVAN Checked By :		D) I	Failure Modes :	P = No sign F2 = Failure F4 = Sign o F5 = Failure	of failure in in structura f any separa in structura	anchor/bar and/o al member in a sha ation, plastic defor al member with cra	r structural membe ear cone mation or deleterio ack radiates outwa	er ous effect on ancho rd from anchor/bar	F1 = Breaking of a F3 = Pull out of ar or/bar	anchor /bar nchor/bar
E) Minimum distance between reaction frame and center of fixing (mm) 640 F) Minimum distance between center of fixing and free edge (mm) 960 G) Drill hole diameter /size (mm) 40 H) Drill hole depth (mm) 320 I) Anchor/rebar embedment depth (mm) 320 Information provided by customer Information provided by customer Tested By : K.K. Wong Approved Signatory : LAU SUN HUNG, TVAN Checked By :		-		F6 = Other f	ailure mode	e(s):				
Fr/ Winflutum distance between center of fixing and free edge (mm) 960 G) Drill hole diameter /size (mm) 40 H) Drill hole depth (mm) 320 I) Anchor/rebar embedment depth (mm) 320 Information provided by customer 320 Tested By : K.K. Wong Approved Signatory : LAU SUN HUNG, IVAN Checked By :		E) P	dinimum distance b	etween read	tion frame a	and center of fixing	g (mm)	640		
Gy Drill hole diameter /size (mm) 40 H) Drill hole depth (mm) 320 I) Anchor/rebar embedment depth (mm) 320 Information provided by customer 320 Tested By : K.K. Wong Checked By :		F) (ammum distance b	etween cent	er of fixing a	and free edge (mn	n)	960		
n) Unit hole depth (mm) 320 i) Anchor/rebar embedment depth (mm) 320 Information provided by customer 320 Tested By : K.K. Wong Approved Signatory : LAU SUN HUNG, TVAN : Checked By : :		() L	vrill note diameter /:	size (mm)				40		
Information provided by customer 320 Information provided by customer Approved Signatory : Tested By K.K. Wong Checked By Endot		n) L	min noie depth (mm	Ŋ 	<i>i</i> i			320		
Information provided by customer Tested By : K.K. Wong Approved Signatory Checked By : Sector :		1) F	Inchor/rebar embed	dment depth	(mm)			320		
Tested By : K.K. Wong Approved Signatory : LAU SUN HUNG, IVAN	Informatio	n provided	by customer							
Checked By : Post	Tested By	· :	K.K	(. Wong	A	ł	Approved Signal	tory :		
FUSI Senior Loching Managar	Checked i	Ву :		_	HA-	F	Post		Senior Testing	Manager



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No.	:	GCD171001428		Date of Issue :	27-10-2017
Client	:	Hilti (Hong Kong) Ltd			
Address	:	701-704, 7/F, Tower A, Manulife Financi	al Center, 223, Wai Yip S	Street, Kwun Tong, Kowloon	
Project	;	(m)	6	0	
Test Location	ţ	Workshop at Yick Yuen Tsuen			
Anchor Type	:	Hilti RE 100 + Y32 Grade 500B	Date Tested	: 25-10-2017	
GCE Reg. No.	:	GCE172137	Test Unit No.	: MI17203	

Sample ID : Sample 2

-					Measured Re	sults			
Test Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	P	
2		40.2	0.5	40.2	0.00	0.00	0.00	P	
3		80.4	0.5	80.4	0.00	0.00	0.00	P	
4		120.7	0.5	120.7	0.00	0.00	0.00	P	
5		160.9	0.5	160.9	0.00	0.05	0.03	P	
6	CP	201.1	0.5	201.1	0.00	0.11	0.06	P	Hilti RE 100 +
7	CB	241.3	0.5	241.3	0.00	0.12	0.06	P	Y32 Grade
8		281.5	0.5	281.5	0.00	0.12	0.06	P	500B
9		321.8	0.5	321.8	0.00	0.12	0.06	P	
10		362.0	0.5	362.0	0.04	0.19	0.12	P	
11		402.2	0.5	402.2	0.15	0.31	0.23	P	
12		442.4	-	419.6	0.15	0.32	0.24	F4	
13									
	D) Fail	ure Modes :	MR = meter P = No sign	room IW :	= Internal wall B	= beam F = floor	clab C = column	00	
	E) Min F) Min G) Dril H) Drill I) Anc	imum distance b imum distance b hole diameter /s hole depth (mm hor/rebar embed	F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)) Iment depth	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a (mm)	anchor/bar and/o I member in a shi tion, plastic defor I member with cra (s) : and center of fixing and free edge (mn	r structural membe ear cone mation or deleteric ack radiates outwa g (mm) n)	er bus effect on ancho rd from anchor/bar 640 960 30 320 320	CB = concrete t F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar hchor/bar
Informatic	E) Min F) Min G) Dril H) Drill I) And	imum distance b imum distance b hole diameter /s hole depth (mm hor/rebar embed / customer	F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)) Iment depth	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a (mm)	anchor/bar and/o I member in a shution, plastic defor I member with cra (s) : and center of fixing and free edge (mn	r structural membe ear cone mation or deleteric ack radiates outwa g (mm) n)	er bus effect on ancho rd from anchor/bar 640 960 30 320 320	CB = concrete t F1 = Breaking of a F3 = Pull out of ar r/bar	olock anchor /bar hchor/bar



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001428 Date of Issue : 27-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project ÷ -**Test** Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y32 Grade 500B Date Tested : 25-10-2017 GCE Reg. No. : GCE172137 Test Unit No. : MI17203

Sample ID : Sample 3

Test L Stage	has success				Measured Re	sults	Relative Deformation (mm) (se		Туре*
	Code	¹ Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)		Failure Modes (see note D)	
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		40.2	0.5	40.2	0.00	0.00	0.00	Р	
3		80.4	0.5	80.4	0.00	0.00	0.00	P	
4		120.7	0.5	120.7	0.00	0.00	0.00	P	
5		160.9	0.5	160.9	0.00	0.00	0.00	P	
6	CB	201.1	0.5	201.1	0.08	0.00	0.04	P	Hilti RE 100 4
7	00	241.3	0.5	241.3	0.08	0.00	0.04	P	Y32 Grade
8		281.5	0.5	281.5	0.22	-0.08	0.07	P	500B
9		321.8	0.5	321.8	0.18	0.00	0.09	P	
10		362.0	0.5	362.0	0.26	-0.06	0.10	P	
11		402.2	0.5	402.2	0.40	-0.05	0.18	P	
12		442.4	-	421.2	0.4	-0.03	0.19	F4	
13									
otes :	A) S B) A C) L	tructural member nchor /Rebar Insta ocation codes :	illed Date : 2 CO = corride MR = meter	1. Grade : C 0 Oct 2017 or ST = sta	25 ; airway CE = ceil	2. Age at test : { ling EW = extern	8 days nal wall SR = stor	e room	
	D) F	ailure Modes :	P = No sign F2 = Failure F4 = Sign of F5 = Failure	of failure in in structura any separa in structura	 Internal wall B : anchor/bar and/oi I member in a she tion, plastic deform I member with cra 	= beam F = floor r structural membe ear cone mation or deleterio ick radiates outwa	slab C = column er bus effect on ancho rd from anchor/bar	CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock anchor /bar Ichor/bar
	U) F	ailure Modes :	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi	of failure in in structura any separa in structura ailure mode	 Internal wall B : anchor/bar and/oi I member in a she tion, plastic defort I member with cra (s) : 	= beam F = floor r structural membe ar cone mation or deleteric ick radiates outwa	slab C = column er ous effect on ancho rd from anchor/bar	CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock anchor /bar ichor/bar
	E) M	ailure Modes : inimum distance b	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fa etween read	of failure in in structura any separa in structura ailure mode	 Internal wall B : anchor/bar and/or l member in a she tion, plastic defort l member with cra (s) : nd center of fixing 	= beam F = floor r structural membe ear cone mation or deleteric ick radiates outwar i (mm)	slab C = column er ous effect on ancho rd from anchor/bar 640	CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	ilock anchor /bar ichor/bar
	E) M F) M	ailure Modes : inimum distance b inimum distance b	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cent	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	 Internal wall B : anchor/bar and/or I member in a she tion, plastic deford I member with cra (s) : and center of fixing and free edge (mm 	= beam F = floor r structural membe ear cone mation or deleteric ick radiates outwar ((mm) n)	slab C = column er ous effect on anchor rd from anchor/bar 640 960	CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock anchor /bar Ichor/bar
	E) M F) M G) D	ailure Modes : inimum distance b inimum distance b rill hole diameter /s	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween centr size (mm)	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	 Internal wall B : anchor/bar and/oi I member in a she tion, plastic defort I member with cra (s) : ind center of fixing ind free edge (mm 	= beam F = floor r structural membe ear cone mation or deleteric ick radiates outwar (mm)	slab C = column er ous effect on anchor rd from anchor/bar 640 960 30	CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock anchor /bar lchor/bar
	Б) Р Б) М Б) Д Н) Д	inimum distance b inimum distance b rill hole diameter /s rill hole depth (mm	P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other finite etween reactions etween centric size (mm))	of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	 Internal wall B : anchor/bar and/oi I member in a she tion, plastic deforr I member with cra (s) : ind center of fixing and free edge (mm 	= beam F = floor r structural membe ear cone mation or deleteric ick radiates outwar (mm)	slab C = column er bus effect on anchor rd from anchor/bar 640 960 30 320	CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock anchor /bar lichor/bar

 Tested By
 :
 K.K. Wong
 Approved Signatory
 :

 Checked By
 :
 .
 Post
 :
 Senior Testing Manager

Information provided by customer



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001428 Date of Issue : 27-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : -**Test** Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y32 Grade 500B Date Tested : 25-10-2017 GCE Reg. No. : GCE172137 Test Unit No. : MI17203

					Measured Re	sults			
Test Stage	Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		40.2	0.5	40.2	0.00	0.00	0.00	P	
3		80.4	0.5	80.4	0.00	0.00	0.00	P	
4		120.7	0.5	120.7	0.00	0.00	0.00	P	
5		160.9	0.5	160.9	0.00	0.00	0.00	P	
6	CB	201.1	0.5	201.1	0.08	-0.01	0.04	P	Hilti RE 100
7	CB	241.3	0.5	241.3	0.13	0.02	0.08	P	Y32 Grade
8		281.5	0.5	281.5	0.19	0.12	0.16	P	500B
9		321.8	0.5	321.8	0.30	0.24	0.27	P	
10		362.0	0.5	362.0	0.40	0.41	0.41	P	
11		402.2	0.5	402.2	0.53	0.59	0.56	P	
12		442.4	-	418.3	0.61	0.68	0.65	E4	
	B) And C) Loc	chor /Rebar Insta	lled Date : 2	0 Oct 2017 or ST = st	ainway CE = cei	2. Age at test : {	8 days		
	B) And C) Loc D) Fai	chor /Rebar Insta ation codes : lure Modes :	illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fa	0 Oct 2017 or ST = st room IW = of failure in in structura in structura ailure mode	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) :	 Age at test : 4 EW = extern beam F = floor r structural member ear cone mation or deleterio ick radiates outwa 	8 days nal wall SR = stor slab C = column er ous effect on ancho rd from anchor/bar	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an pr/bar	olock anchor /bar achor/bar
	B) Ann C) Loc D) Fai	chor /Rebar Insta ation codes : lure Modes : imum distance b	lled Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react	0 Oct 2017 or ST = st room IW = of failure in in structura any separa ailure mode tion frame a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defon I member with cra (s) : nd center of fixing	 Age at test : { ling EW = extern beam F = floor r structural member ear cone mation or deleterion ick radiates outward (mm) 	al wall SR = stor slab C = column er ous effect on ancho rd from anchor/bar 640	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar achor/bar
	 B) Anti C) Loc D) Fail E) Min F) Min 	chor /Rebar Insta ation codes : lure Modes : imum distance b imum distance b	illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other failer etween react etween centor	0 Oct 2017 or ST = st room IW = of failure in In structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing and free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ick radiates outwa i (mm) i)	al wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar 640 960	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar r/bar	olock anchor /bar achor/bar
	 B) Anti C) Loc D) Fail E) Min F) Min G) Drill 	chor /Rebar Insta cation codes : lure Modes : imum distance b imum distance b I hole diameter /s	illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi- etween react etween centor size (mm)	0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B = anchor/bar and/o I member in a she tion, plastic defort I member with cra (s) : nd center of fixing and free edge (mm	 Age at test : 4 EW = extern beam F = floor r structural members ar cone mation or deleterion k radiates outward (mm) (mm) 	3 days nal wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar 640 960 30	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an m/bar	olock anchor /bar lichor/bar
	 B) And C) Loc D) Fail E) Min F) Min G) Drill H) Drill 	chor /Rebar Insta cation codes : lure Modes : imum distance b imum distance b hole diameter /s hole depth (mm	illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween centor size (mm))	0 Oct 2017 or ST = st room IW = of failure in in structura any separa ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defort I member with cra (s) : nd center of fixing ind free edge (mm	 Age at test : { ling EW = extern beam F = floor r structural member ear cone mation or deleterion k radiates outwain (mm) (mm) 	a days slab C = column er ous effect on ancho rd from anchor/bar 640 960 30 320	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar achor/bar
	 B) And C) Loc D) Fail E) Min F) Min G) Drill H) Drill I) And 	chor /Rebar Insta cation codes : lure Modes : imum distance b imum distance b l hole diameter /s l hole depth (mm hor/rebar embed	illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other faile etween reactive etween centre size (mm)) Iment depth (0 Oct 2017 or ST = st room IW = of failure in In structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mm	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio lick radiates outwar (mm) n)	al wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar 640 960 30 320 320	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	olock anchor /bar achor/bar
<u>iformation</u>	B) And C) Loo D) Fai E) Min F) Min G) Drill H) Drill I) And provided by	chor /Rebar Insta cation codes : lure Modes : lure Modes : imum distance b imum distance b hole diameter /s hole depth (mm hor/rebar embed <u>y customer</u>	Illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cento size (mm)) Iment depth of	0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing and free edge (mm	 Age at test : { Ing EW = extern beam F = floor r structural members ar cone mation or deleterion ack radiates outward (mm) (mm) 	a days al wall SR = stor slab C = column er ous effect on ancho rd from anchor/bar 640 960 30 320 320	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor/bar achor/bar
<u>iformation</u>	B) And C) Loo D) Fai E) Min F) Min G) Drill H) Drill I) And provided by	chor /Rebar Insta cation codes : lure Modes : lure Modes : imum distance b imum distance b hole diameter /s hole depth (mm hor/rebar embed y customer K.K	Illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other fi etween react etween cento size (mm)) ment depth of . Wong	Oct 2017 or ST = st room IW = of failure in In structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B = anchor/bar and/o I member in a she tion, plastic defort I member with cra (s) : nd center of fixing and free edge (mm	 Age at test : 1 Ing EW = extern beam F = floor r structural members ar cone mation or deleterion ick radiates outward icmn) icmn) icmn) 	al wall SR = stor slab C = column er ous effect on anchor rd from anchor/bar 640 960 30 320 320	CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar AU SUN HUNC	olock anchor/bar achor/bar



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001428 Date of Issue : 27-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project ÷ ... **Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y32 Grade 500B Date Tested : 25-10-2017 GCE Reg. No. : GCE172137 Test Unit No. : MI17203

Sample ID : Sample 5

Test Locat		opation				Measured Re	sults			
Test Stage	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*	
1		0.0		0.0	0.00	0.00	0.00	P		
2		40.2	0.5	40.2	0.00	0.00	0.00	Р		
3		80.4	0.5	80.4	0.00	0.00	0.00	Р		
4		120.7	0.5	120.7	0.00	0.00	0.00	Р		
5		160.9	0.5	160.9	0.00	0.00	0.00	Р		
6	CB	201.1	0.5	201.1	0.15	0.00	0.08	P	Hilti RE 100 ·	
7	CD	241.3	0.5	241.3	0.20	0.00	0.10	P	Y32 Grade	
8		281.5	0.5	281.5	0.29	0.00	0.15	P	500B	
9		321.8	0.5	321.8	0.41	0.00	0.21	P		
10		362.0	0.5	362.0	0.55	0.11	0.33	P		
11		402.2	0.5	402.2	0.81	0.28	0.55	P		
12		442.4	-	419.5	0.83	0.32	0.58	F4		
12.5		-								
13 Notes :	A) SI	ructural member		1. Grade : C	25	2. Age at lest : 4	B days			
lotes :	A) St B) Ar C) Lo D) Fa	ructural member inchor /Rebar Insta achor /Rebar Insta acation codes : illure Modes :	alled Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode	25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) :	2. Age at test : a ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwa	B days al wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar br/bar	olock anchor /bar achor/bar	
13 otes :	A) St B) Ar C) Lo D) Fa	ructural member inchor /Rebar Insta action codes : ailure Modes :	alled Date : 2 CO = corrid MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a	25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing	2. Age at test : a ling EW = extern = beam F = floor r structural membe ear cone mation or deletering ack radiates outwa	B days al wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 640	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar tr/bar	block anchor /bar achor/bar	
lotes :	 A) S1 B) Ar C) Lo D) Fa E) Mi F) Mi 	ructural member : nchor /Rebar Insta ocation codes : nilure Modes : nimum distance b	alled Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing and free edge (mn	2. Age at test : 4 ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa g (mm)	B days al wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar 640 960	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	block anchor /bar anchor/bar	
lotes :	A) Si B) Ar C) Lo D) Fa E) Mi F) Mi G) Dr	ructural member inchor /Rebar Insta ocation codes : illure Modes : nimum distance b nimum distance b	alled Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f retween reac etween cent size (mm)	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing and free edge (mm	2. Age at test : a ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa g (mm) n)	B days al wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 640 960 30	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an n/bar	olock anchor /bar achor/bar	
lotes :	A) St B) Ar C) Lo D) Fa E) Mi F) Mi G) Dr H) Dr	ructural member inchor /Rebar Insta ocation codes : illure Modes : illure Modes : ill hole diameter /s ill hole diameter /s	alled Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mm	2. Age at test : 4 ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwa g (mm) h)	B days al wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 640 960 30	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar nchor/bar	
lotes :	A) St B) Ar C) Lo D) Fa E) Mi F) Mi G) Dr H) Dr I) Ar	ructural member inchor /Rebar Insta action codes : allure Modes : allure Modes : all hole diameter /s all hole diameter /s all hole depth (mm chor/rebar embed	alled Date : 2 CO = corridi MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mn	2. Age at test : 4 ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa g (mm) n)	B days al wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar 640 960 30 320 320	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar r/bar	olock anchor /bar achor/bar	
lotes :	A) St B) Ar C) Lo D) Fa E) Mi G) Dr H) Dr I) Ar	ructural member : nchor /Rebar Insta ocation codes : nilure Modes : nimum distance b nimum distance b	alled Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f retween reac etween cent size (mm)) dment depth	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mn	2. Age at test : 4 ling EW = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa g (mm) n)	al wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar 640 960 30 320 320	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar achor/bar	

Tested By

Checked By



Approved Signatory

.

LAU SUN HUNG, WAN

: Senior Testing Manager





GEOTECHNICS & CONCRETE ENGINEERING (H. K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034 香港土力混凝土工程有限公司 九龍紅磡高山道六號地下 電話: 852-2365 9123

TEST REPORT

HILTI (Hong Kong) Ltd

701-704, 7/F, Tower A, Manulife Financial Center, 223 Wai Yip Street, Kwun Tong, Kowloon

Tensile Proof Load Test on Anchor

Anchor Type : Hilti RE100 + Y40 Grade 500B

(Sample 1 to Sample 5)

Ref. Standard : BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3

Checked by:

Technical Officer

Approved Signatory:

LAU SUN HUNG, IVAN Senior Testing Manager

Issued Date: 27-Oct-2017

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Report No. GCD171001440

GEOTECHNICS & CONCRETE ENGINEERING (H.K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034

1.0 Information



(a) Manufacturer	:	Hilti (Hong Kong) Ltd
(b) Chemical grout	:	Hilti RE100
(c) Rebar size and ty	pe :	Y40 Grade 500B
(d) Mass concrete siz	ze :	2400 mm x 2400mm x 800mm
(e) Concrete grade	:	C25
(f) Drill hole diameter	:	55mm
(g) Drill hole depth	:	400mm
(h) Rebar embedmen	it depth	: 400mm
(i) Test standard	: BS	5080 : Part 1 : 1993 cl 6, 7.1.1 & 7.1
(i) Minimum distance	hetwoo	proportion from and contar of the f

(J) Minimum distance between reaction frame and center of the fixing : 800mm

(k) Minimum distance between the center of fixing and free edge : 1200mm

2.0 Test results

Anchor Type	Hilti RE100 + Y40 Grade 500B								
Sample ID	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5				
Failure load (kN)	639.6	640.1	643.1	637.7	640.5				
Failure mode	F4	F4	F4	F4	F4				
Average failure load (kN)			640.2	0					
Standard deviation (kN)			1.94						

.3

Failure mode

P = No sign of failure in anchor/bar and/or structural member

- F1 = Breaking of anchor /bar
- F2 = Failure in structural member in a shear cone
- F3 = Pull out of anchor/bar
- F4 = Sign of any separation, plastic deformation or deleterious effect on anchor/bar
- F5 = Failure in structural member with crack radiates outward from anchor/bar
- F6 = Other failure mode(s) :

Issued Date: 27-Oct-2017



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001440 Date of Issue : 27-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project . -**Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y40 Grade 500B Date Tested : 25-10-2017 GCE Reg. No. : GCE172137 Test Unit No. : MI17203

Sample ID : Sample 1

	Location Code				Measured Results				
Test Stage		cation Specified Force Test Holding Code Force Time (kN) (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*	
1		0.0		0.0	0.00	0.00	0.00	Р	
2		62.8	0.5	62.8	0.00	0.00	0.00	P	
3		125.6	0.5	125.6	0.00	0.00	0.00	P	
4		188.5	0.5	188.5	0.00	0.00	0.00	P	
5		251.3	0.5	251.3	0.00	0.00	0.00	P	
6	CP	314.1	0.5	314.1	0.00	0.00	0.00	P	Hilti RE 100 +
7	СВ	376.9	0.5	376.9	0.00	0.08	0.04	P	Y40 Grade
8		439.7	0.5	439.7	0.00	0.20	0.10	P	500B
9		502.5	0.5	502.5	0.00	0.40	0.20	P	
10		565.4	0.5	565.4	0.21	0.63	0.42	D	
11		628.2	0.5	628.2	0.32	0.73	0.53	P	
12		691.0	-	639.6	0.39	0.82	0.55	F EA	
13				00010	0.00	0.02	0.01	Г4	
	E) []	Failure Modes : Failure Modes : Minimum distance b Minimum distance b Drill hole dismeter (MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent	or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	alrway CE = cer = Internal wall B anchor/bar and/o I member in a she tion, plastic defon I member with cra (s) : nd center of fixing nd free edge (mn	ling EW = exterr = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa g (mm) n)	al wall SR = sto slab C = column er bus effect on anche rd from anchor/bar 800 1200	re room CB = concrete b F1 = Breaking of a F3 = Pull out of ar or/bar	llock anchor /bar ichor/bar
	- U) I	Drill hole death (mm	size (mm)				55		
	n) i	Anghos(sobos ombos) Insent de sile	(400		
	0 7	Anchorrebar embed	iment depth	(mm)			400		
Informatior	n provideo	by customer							
Tested By		кк	Mong	A				C	

Checked By



LAU SUN HUNG, IVAN : Senior Testing Manager

HIT-RE100 Epoxy Anchor (Post-Installed Rebar)



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001440 Date of Issue : 27-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project ; -Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y40 Grade 500B Date Tested : 25-10-2017 GCE Reg. No. : GCE172137 Test Unit No. : MI17203

Sample ID : Sample 2

Test	1.2		Measured Resu		ults					
Test Stage	Location Code	Location Code	Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Type*
1		0.0	-	0.0	0.00	0.00	0.00	Р		
2		62.8	0.5	62.8	0.00	0.00	0.00	P		
3		125.6	0.5	125.6	0.00	0.00	0.00	Р		
4		188.5	0.5	188.5	0.00	0.00	0.00	P		
5		251.3	0.5	251.3	0.00	0.00	0.00	P		
6	CB	314.1	0.5	314.1	0.02	0.00	0.01	P	Hilti RE 100 -	
7	CD	376.9	0.5	376.9	0.09	0.00	0.05	Р	Y40 Grade	
8		439.7	0.5	439.7	0.16	0.13	0.15	P	200B	
9		502.5	0.5	502.5	0.25	0.20	0.23	P		
10		565.4	0.5	565.4	0.37	0.32	0.35	P		
11		628.2	0.5	628.2	0.48	0.42	0.45	P		
12		691.0	-	640.1	0.54	0.53	0.54	F4		
13										
Notes :	A) Str B) An C) Loo	uctural member : chor /Rebar Insta	Iled Date : 2	1. Grade : C 0 Oct 2017 or ST = st	25	2. Age at test : t	8 days			
	D) Fai E) Min	imum distance b	MR = meter $P = No sign$ $F2 = Failure$ $F4 = Sign of$ $F5 = Failure$ $F6 = Other f$ etween reac	room IW = of failure in in structura any separa in structura ailure mode tion frame a	= Internal wall B anchor/bar and/o Il member in a she tion, plastic defor Il member with cra (s) : und center of fixing	<pre>img Evv = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa g (mm)</pre>	nal walf SR = stor slab C = column er bus effect on ancho rd from anchor/bar 800	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar nchor/bar	
	D) Fai E) Min F) Min	imum distance b	MR = meter $P = No sign$ $F2 = Failure$ $F4 = Sign of$ $F5 = Failure$ $F6 = Other f$ etween reacted the etween cent	room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	= Internal wall B anchor/bar and/o Il member in a she ttion, plastic defor Il member with cra (s) : and center of fixing and free edge (mn	<pre>img Evv = extern = beam F = floor r structural member ar cone mation or deleteric ack radiates outwa g (mm) n)</pre>	nal walf SR = stor slab C = column er bus effect on anchor rd from anchor/bar 800 1200	e room CB = concrete b F1 = Breaking of a F3 = Pull out of ar or/bar	olock anchor /bar Iichor/bar	
	D) Fai E) Min F) Min G) Dril	imum distance b imum distance b inum distance b	MR = meter $P = No sign$ $F2 = Failure$ $F4 = Sign of$ $F5 = Failure$ $F6 = Other f$ $etween reac$ $etween centure$ $Size (mm)$	room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	 Internal wall B anchor/bar and/o I member in a she anchor/bar and/o I member with cra- (s) : and center of fixing and free edge (mn) 	<pre>img Evv = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa g (mm) n)</pre>	nal walf SR = stor slab C = column er bus effect on ancho rd from anchor/bar 800 1200 30	re room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar anchor/bar	
	D) Fai E) Min F) Min G) Dril H) Dril	imum distance b imum distance b I hole diameter /s I hole depth (mm	MR = meter $P = No sign$ $F2 = Failure$ $F4 = Sign of$ $F5 = Failure$ $F6 = Other f$ $etween reac$ $etween centsize (mm)$)	room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	 Internal wall B anchor/bar and/o I member in a she ition, plastic defor I member with cra (s) : und center of fixing and free edge (mn) 	<pre>img Evv = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa g (mm) n)</pre>	nal walf SR = stor slab C = column er bus effect on ancho rd from anchor/bar 800 1200 30 400	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar achor/bar	
nformatio	D) Fai E) Min F) Min G) Dril H) Dril I) And	imum distance b imum distance b I hole diameter /s I hole depth (mm thor/rebar embed y customer	MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cent size (mm)) Iment depth	room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a (mm)	 Internal wall B anchor/bar and/o I member in a she ition, plastic defor I member with cra (s) : und center of fixing and free edge (mn 	<pre>img Evv = extern = beam F = floor r structural membe ear cone mation or deleteric ack radiates outwa g (mm) n)</pre>	nal walf SR = stor slab C = column er bus effect on anchor rd from anchor/bar 800 1200 30 400 400	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an m/bar	olock anchor /bar nchor/bar	

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: Senior Testing Manager



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001440 Date of Issue : 27-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project ÷ ... **Test Location** : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y40 Grade 500B Date Tested : 25-10-2017 GCE Reg. No. : GCE172137 Test Unit No. : MI17203

Sample ID : Sample 3

	Location			Measured Results					
Test Stage	Code	Specified Force Test Holdin Force Time (kN) (min	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		62.8	0.5	62.8	0.00	0.00	0.00	Р	
3		125.6	0.5	125.6	0.00	0.00	0.00	Р	
4		188.5	0.5	188.5	0.00	0.00	0.00	Р	
5		251.3	0.5	251.3	0.00	0.00	0.00	Р	
6	CB	314.1	0.5	314.1	0.05	0.00	0.03	Р	Hilti RE 100
7	00	376.9	0.5	376.9	0.18	0.00	0.09	Р	Y40 Grade
8		439.7	0.5	439.7	0.25	0.06	0.16	Р	200B
9		502.5	0.5	502.5	0.43	0.09	0.26	P	
10		565.4	0.5	565.4	0.56	0.19	0.38	Р	
11		628.2	0.5	628.2	0.70	0.28	0.49	P	
12		691.0	-	643.1	0.73	0.52	0.63	F4	
13					1002001000				
	в) С) D) F) I	Anchor /Rebar Insta Location codes : Failure Modes : Minimum distance b Minimum distance b	CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f retween reac	0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : und center of fixing and free edge (mn	ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio ack radiates outwa g (mm) n)	nal wall SR = stor slab C = column er ous effect on ancho rd from anchor/bar 800 1200	e room CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	llock Inchor /bar Ichor/bar
	G) I	Drill hole diameter /s	size (mm)				30		
	H) (Drill hole depth (mm	i)				400		
	I) /	Anchor/rebar embed	iment depth	(mm)			400		
nformatio	n providec	by customer							

Tested By

Checked By



Approved Signatory

:

LAU SUN HUNG, IVAN : Senior Testing Manager



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001440 Date of Issue : 27-10-2017 Client : Hilti (Hong Kong) Ltd Address : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Project : -Test Location : Workshop at Yick Yuen Tsuen : Hilti RE 100 + Y40 Grade 500B Anchor Type Date Tested : 25-10-2017 GCE Reg. No. : GCE172137 Test Unit No. : MI17203

Sample ID : Sample 4

				Measured Results					
Test Stage	Location Code	on Specified Force Test Holdin Force Time (kN) (min	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)	Туре*
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		62.8	0.5	62.8	0.00	0.00	0.00	Р	
3		125.6	0.5	125.6	0.00	0.00	0.00	Р	
4		188.5	0.5	188.5	0.00	0.00	0.00	P	
5		251.3	0.5	251.3	0.00	0.00	0.00	P	
6	CP	314.1	0.5	314.1	0.00	0.00	0.00	P	Hilti RE 100 ·
7	CB	376.9	0.5	376.9	0.00	0.00	0.00	P	Y40 Grade
8		439.7	0.5	439.7	0.06	0.05	0.06	P	500B
9		502.5	0.5	502.5	0.25	0.13	0.00	P	
10		565.4	0.5	565.4	0.34	0.30	0.10	P	
11		628.2	0.5	628.2	0.51	0.50	0.52	P	
	-	0010		007.7	0.01	0.01	0.01	F	
12		691.0	-	h.1//	0.62	1.01			
12 13 Notes :	A) S	691.0	-	637.7 1. Grade : C	25	2. Age at test : 8	0.62 B days	F4	
12 13	A) S B) A C) Lu D) F.	691.0 tructural member : nchor /Rebar Insta ocation codes : ailure Modes :	illed Date : 2 CO = corrido MR = meter P = No sign	1. Grade : C 0 Oct 2017 or ST = st room IW =	0.62 25 ; airway CE = cei = Internal wall B	2. Age at test : 8 ling EW = extern = beam F = floor	0.62 3 days nal wall SR = stor slab C = column	F4 e room CB = concrete b	lock
12 13	A) S B) A C) Lu D) F-	691.0 tructural member : nchor /Rebar Insta ocation codes : ailure Modes :	- illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in	0.62 25 :: airway CE = cei = Internal wall B anchor/bar and/o	2. Age at test : 8 ling EW = extern = beam F = floor r structural membe	0.62 8 days nal wall SR = stor slab C = column er	F4 e room CB = concrete b F1 = Breaking of a	llock Inchor /bar
12 13	A) S B) A C) Li D) F.	691.0 tructural member : nchor /Rebar Insta ocation codes : ailure Modes :	Illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura	0.62 25 :: airway CE = cei anchor/bar and/o I member in a she tion plastic defor	2. Age at test : { ling EW = extern = beam F = floor r structural membe ear cone	0.62 8 days nal wall SR = stor slab C = column er l	F4 e room CB = concrete b F1 = Breaking of a F3 = Pull out of an	llock Inchor /bar Inchor/bar
12 13	A) S B) A C) Li D) F.	691.0 tructural member : nchor /Rebar Insta ocation codes : ailure Modes :	Illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of E5 = Failure	1. Grade : C 0 Oct 2017 or ST = st of failure in in structura any separa	0.62 25 ; airway CE = cei Internal wall B anchor/bar and/o I member in a she tion, plastic defor	2. Age at test : 8 ling EW = extern = beam F = floor r structural member ear cone mation or deleterio	0.62 8 days al wall SR = stor slab C = column er I bus effect on ancho	F4 e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	lock Inchor /bar Inchor/bar
12 13 Notes :	A) S B) A C) Li D) Fi	691.0 tructural member : nchor /Rebar Insta ocation codes : allure Modes :	illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura	0.62 25 :: airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra	2. Age at test : 8 ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio tck radiates outwa	U.62 8 days al wall SR = stor slab C = column er bus effect on anchor rd from anchor/bar	F4 e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock inchor /bar ichor/bar
12 13	A) S B) A C) Li D) F.	691.0 tructural member : nchor /Rebar Insta ocation codes : ailure Modes :	- CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura iany separa in structura ailure mode	0.62 25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) :	2. Age at test : 8 ling EW = extern = beam F = floor r structural member ear cone mation or deleterio ack radiates outwar	U.62 B days sal wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar	F4 e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock Inchor /bar Inchor/bar
12 13	A) S B) A C) Li D) F.	691.0 tructural member : nchor /Rebar Insta ocation codes : ailure Modes :	- Illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura any separa in structura ailure mode tion frame a	0.62 25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing	0.61 2. Age at test : { ling EW = extern = beam F = floor r structural member ear cone mation or deleterio eck radiates outwar g (mm)	0.62 8 days al wall SR = stor slab C = column er l bus effect on anchor rd from anchor/bar 800	F4 e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	olock anchor /bar achor/bar
12 13	 A) S B) A C) Li D) F. E) M F) M G) D. 	691.0 tructural member : nchor /Rebar Insta ocation codes : allure Modes : inimum distance b nimum distance b	Illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween centu	1. Grade : C 0 Oct 2017 or ST = st of failure in in structura any separa ailure mode tion frame a er of fixing a	0.62 25 : airway CE = cei anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mm	2. Age at test : 8 ling EW = extern = beam F = floor r structural member ear cone mation or deleterio tok radiates outwar g (mm)	0.62 B days al wall SR = stor slab C = column er I bus effect on ancho rd from anchor/bar 800 1200	F4 e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	lock Inchor /bar Inchor/bar
12 13	 A) S B) A C) Li D) F. E) M F) M G) Di H) Di 	691.0 tructural member : nchor /Rebar Insta ocation codes : ailure Modes : ailure Modes : inimum distance b nimum distance b nimum distance b ill hole diameter /s	liled Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween centure size (mm)	1. Grade : C 0 Oct 2017 or ST = st of failure in in structura any separa in structura ailure mode tion frame a er of fixing a	U.62 25 ; airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mm	2. Age at test : 8 ling EW = extern = beam F = floor r structural member ear cone mation or deleterio ack radiates outwar g (mm)	0.62 B days al wall SR = stor slab C = column er bus effect on ancho rd from anchor/bar 800 1200 30	F4 e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock Inchor /bar Inchor/bar
12 13	 A) S B) A C) Li D) F. E) M F) M G) Di H) Di h) A 	691.0 tructural member : nchor /Rebar Insta ocation codes : ailure Modes : ailure Modes : inimum distance b nimum distance b nimum distance b nimum distance b nimum distance b nimum distance b	- illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween cento bize (mm))	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura in structura ailure mode tion frame a er of fixing a	U.62 25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mm	2. Age at test : 8 ling EW = extern = beam F = floor r structural membe ear cone mation or deleterio tck radiates outwar (mm)	0.62 B days al wall SR = stor slab C = column er l bus effect on anchor rd from anchor/bar 800 1200 30 400	F4 e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock Inchor /bar Inchor/bar
12 13	 A) S B) A C) Li D) F. E) M F) M G) Di H) Di I) Ar 	691.0 tructural member : nchor /Rebar Insta ocation codes : ailure Modes : ailure Modes : inimum distance b nimum distance b nimum distance b ill hole diameter /s ill hole depth (mm nchor/rebar embed	- illed Date : 2 CO = corrido MR = meter P = No sign F2 = Failure F4 = Sign of F5 = Failure F6 = Other f etween reac etween centu size (mm)	1. Grade : C 0 Oct 2017 or ST = st room IW = of failure in in structura in structura ailure mode tion frame a er of fixing a	0.62 25 airway CE = cei = Internal wall B anchor/bar and/o I member in a she tion, plastic defor I member with cra (s) : nd center of fixing ind free edge (mm	2. Age at test : 8 ling EW = extern = beam F = floor r structural member ear cone mation or deleterio tek radiates outwar (mm)	0.62 B days al wall SR = stor slab C = column er l bus effect on anchor rd from anchor/bar 800 1200 30 400 400	F4 e room CB = concrete b F1 = Breaking of a F3 = Pull out of an r/bar	llock Inchor /bar Ichor/bar

Checked By

HIT-RE100 Epoxy Anchor

(Post-Installed Rebar)

Tested By



K.K. Wong

Approved Signatory

:

LAU SUN HUNG, IVAN : Senior Testing Manager



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REPORT ON IN-SITU TENSILE PROOF LOAD TEST ON ANCHOR

In accordance with BS 5080 : Part 1 : 1993 Cl. 6, 7.1.1 & 7.1.3 (Incremental Loads)

Report No. : GCD171001440 Date of Issue : 27-10-2017 Client : Hilti (Hong Kong) Ltd : 701-704, 7/F, Tower A, Manulife Financial Center, 223, Wai Yip Street, Kwun Tong, Kowloon Address Project 1.00 Test Location : Workshop at Yick Yuen Tsuen Anchor Type : Hilti RE 100 + Y40 Grade 500B Date Tested : 25-10-2017 GCE Reg. No. : GCE172137 Test Unit No. : MI17203

Sample ID : Sample 5

	Location Code			Measured Results					
Test Stage		Location Code	D Specified Test Force (kN)	Force Holding Time (min)	Applied Forced (kN)	Deformation Gauge 1 (mm)	Deformation Gauge 2 (mm)	Relative Deformation (mm)	Failure Modes (see note D)
1		0.0	-	0.0	0.00	0.00	0.00	Р	
2		62.8	0.5	62.8	0.00	0.00	0.00	Р	
3		125.6	0.5	125.6	0.00	0.00	0.00	Р	
4		188.5	0.5	188.5	0.00	0.00	0.00	Р	
5		251.3	0.5	251.3	0.00	0.00	0.00	Р	
6	CB	314.1	0.5	314.1	0.00	0.00	0.00	P	Hilti RE 100 -
7	CD	376.9	0.5	376.9	0.00	0.00	0.00	P	Y40 Grade
8		439.7	0.5	439.7	0.11	0.00	0.06	P	500B
9		502.5	0.5	502.5	0.22	0.00	0.11	P	
10		565.4	0.5	565.4	0.35	0.00	0.18	P	
11		628.2	0.5	628.2	0.55	0.26	0.41	P	
12		691.0	-	640.5	0.57	0.31	0.44	F	
13				010.0	0.07	0.01	0.44	Г4	
	D) F	ailure Modes :	MR = meter P = No sign F2 = Failure F4 = Sign or F5 = Failure	room IW : of failure in in structura f any separa in structura	= Internal wall B anchor/bar and/o Il member in a she ation, plastic defor	= beam F = floor r structural membe ear cone mation or deleterio sck radiates outwa	slab C = column er ous effect on ancho rd from anchor/bar	CB = concrete b F1 = Breaking of a F3 = Pull out of an or/bar	olock anchor /bar Iichor/bar
			F6 = Other f	ailure mode	(s):				
	E) N	finimum distance b	between reac	tion frame a	and center of fixing) (mm)	800		
	F) N	linimum distance b	between cent	er of fixing a	and free edge (mn	1)	1200		
	G) D	rill hole diameter /	size (mm)				30		
	H) D	rill hole depth (mm	ר)				400		
	I) A	nchor/rebar embed	dment depth	(mm)			400		
Information	n provided	by customer							
T								d	
lested By	:	K.K	K. Wong	A	F	Approved Signat	tory :	AU SUN HUNG	S. IVAN
Checked B	iy :		6	40	F	ost		Senior Testing N	Aanagar

HIT-RE100 Epoxy Anchor (Post-Installed Rebar)

Post

: Senior Testing Manager

GEOTECHNICS & CONCRETE ENGINEERING (H.K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034



HIT-RE100 Epoxy Anchor (Post-Installed Rebar)

Hilti RE100 + Y40 Grade 500B

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Apr 2024



Attn. : To whom it may concern

 Date
 : 26 September 2023

 Ref.
 : 118/AC/DY/23

Subject : Country of Origin- Hilti HIT-RE100 Epoxy Anchor

Dear Sir / Madam,

Enclosed please find the information of Hilti HIT-RE100 Epoxy Anchor.

Brand Name	: Hilti
Model Name	: Hilti HIT-RE100 Epoxy Anchor
Manufacturer	: Hilti Corporation
Address of Manufacturer	: FL-9494, Principality of Liechtenstein.
Manufacturer Contact Per	son : 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	: Germany

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



Date	: 30 April 2019
Ref.	: 038/AC/KC/19

To whom it may concern,

Subject: <u>RE: Hilti HIT-RE 100 – New product replacement of HIT-RE 500</u>

With the continuous upgrade in Hilti chemical anchor portfolio, we are pleased to introduce the new epoxy mortar **Hilti HIT-RE 100 injection mortar system** to replace the existing HIT-RE 500. **HIT-RE 100** will be officially phased in from **July 2019**, meanwhile HIT-RE 500 will be phased out until the stock lasts the end of 2019.

	Phase out item	Phase in item			
Item no.	Description	Item no.	Description		
426672	HIT-RE 500/500/1	2123386	HIT-RE 100/500/1		
426675	HIT-RE 500/330/1				

We thank you for the confidence in Hilti quality and we do our utmost to provide our customers with quality products and service. Below are the highlighted product features of HIT-RE 100.

- Same design bond stress as RE 500 in rebar application, as per ETA-15/0883
- Same curing and working time as RE 500
- Same installation procedures and accessories as RE 500
- For design under static and quasi-static action according to EOTA TR 029 and CEN/TS 1992-4 "Design of fastenings for use in concrete"
- Detailed technical data can be referred to Hilti RE 100 technical data

Should you need further information or support, please feel free to contact our customer service hotline 8228 8118.

Yours sincerely, For and on behalf of **Hilti (Hong Kong) LTD.**

Kelvin Chan Product Manager

> 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



HIT-RE 100

Safety information for 2-Component-products

Issue date: 11/05/2020

Revision date: 11/05/2020

Supersedes: 11/07/2018

Version: 3.0

SECTION 1: Kit identification

1.1 Product identifier

Product name



Product code

BU Anchor

1.2 Details of the supplier of the Safety information for 2-Component-products

Hilti (Hong Kong) Ltd. 701-704, 7/F, Tower A, Manulife Financial Centre 223 Wai Yip Street, Kwun Tong Kowloon - Hong Kong T +852 27734 700 <u>hksales@hilti.com</u>

SECTION 2: General information

Storage

Storage temperature : 5 - 25 °C

A SDS for each of these components is included. Please do not separate any component SDS from this cover page

This Kit should be handled in accordance with good laboratory practices and appropriate personal protective equipment should be used

SECTION 3:

Classification of the Product

Classification according to the United Nations GHS (Rev. 4, 2011)

H302
H314
H318
H317
H341
H360
H401
H411

Label elements

Labelling according to the United Nations GHS (Rev. 4, 2011)

Hazard pictograms (GHS UN)

Signal word (GHS UN) Hazardous ingredients Hazard statements (GHS UN)



Danger

Epoxy resin, Amines

H314 - Causes severe skin burns and eye damage.

H317 - May cause an allergic skin reaction.

H341 - Suspected of causing genetic defects.

H360F - May damage fertility.



HIT-RE 100

Safety information for 2-Component-products

	H411 - Toxic to aquatic life with long lasting effects.
Precautionary statements (GHS UN)	 P280 - Wear eye protection, protective clothing, protective gloves. P262 - Do not get in eyes, on skin, or on clothing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P302+P352 - IF ON SKIN: Wash with plenty of water.

Additional information

2-component-foilpack, contains:

Component A: Epoxy resin, Reactive diluent, inorganic filler Component B: Amine hardener, inorganic filler



Name	General description	Quantity	Unit	Classification according to the United Nations GHS
HIT-RE 100, A		1	pcs	Skin Corr. 1C, H314 Skin Sens. 1, H317 Muta. 2, H341 Repr. 1B, H360 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
HIT-RE 100, B		1	pcs	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Acute 3, H402 Aquatic Chronic 3, H412

SECTION 4: General advice

General advice

For professional users only

SECTION 5: Safe handling advice

General measures	Spilled material may present a slipping hazard
Environmental precautions	Prevent entry to sewers and public waters Notify authorities if liquid enters sewers or public waters Avoid release to the environment Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations. After curing, the product can be disposed of with household waste.
Storage conditions	Protect from sunlight. Store in a well-ventilated place.
Technical measures	Comply with applicable regulations
Precautions for safe handling	Wear personal protective equipment Avoid contact with skin and eyes Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work Avoid contact during pregnancy/while nursing
Methods for cleaning up	This material and its container must be disposed of in a safe way, and as per local legislation Mechanically recover the product On land, sweep or shovel into suitable containers Store away from other materials.
For containment	Collect spillage.
Incompatible materials	Sources of ignition Direct sunlight
Incompatible products	Strong bases Strong acids



HIT-RE 100

Safety information for 2-Component-products

SECTION 6: First aid measures Get immediate medical advice/attention. First-aid measures after eye contact Immediately rinse with water for a prolonged period while holding the eyelids wide open Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist First-aid measures after ingestion Do not induce vomiting Rinse mouth Immediately call a POISON CENTER/doctor. First-aid measures after inhalation Remove person to fresh air and keep comfortable for breathing. First-aid measures after skin contact Wash with plenty of water/... Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get immediate medical advice/attention. Never give anything by mouth to an unconscious person First-aid measures general If you feel unwell, seek medical advice (show the label where possible) Symptoms/effects Causes severe skin burns and eye damage. Symptoms/effects after eye contact Causes serious eye damage. Symptoms/effects after inhalation May cause an allergic skin reaction. SECTION 7: Fire fighting measures

Firefighting instructions	Use water spray or fog for cooling exposed containers Exercise caution when fighting any chemical fire Prevent fire fighting water from entering the environment
Protection during firefighting	Self-contained breathing apparatus Do not enter fire area without proper protective equipment, including respiratory protection
Hazardous decomposition products in case of fire	Thermal decomposition generates : Carbon dioxide Carbon monoxide

SECTION 8: Other information

No data available



1.1. Product identifier

HIT-RE 100, B Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011) Issue date: 11/05/2020

Revision date: 11/05/2020

Supersedes: 11/07/2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Version: 2.0

Product form	Mixture	
Product name	HIT-RE 100, B	
UN-No. (ADR)	3259	
Product code	BU Anchor	
1.2. Relevant identified uses of the substan	nce or mixture and uses advised against	
Use of the substance/mixture	For professional use only Composite mortar component for fasteners in the construction industry	
1.3. Details of the supplier of the safety data sheet		
Supplier Hilti (Hong Kong) Ltd. 701-704, 7/F, Tower A, Manulife Financial Centre 223 Wai Yip Street, Kwun Tong Kowloon - Hong Kong T +852 27734 700 hksales@hilti.com	Department issuing data specification sheet Hilti Entwicklungsgesellschaft mbH Hiltistraße 6 86916 Kaufering - Deutschland T +49 8191 906876 anchor.hse@hilti.com	
1.4. Emergency telephone number		
Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +852 27734 700	
SECTION 2: Hazards identification		

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS (Rev.	4, 2011)
Acute Tox. 4 (Oral)	H302
Skin Corr. 1B	H314
Skin Sens. 1	H317
Aquatic Acute 3	H402
Aquatic Chronic 3	H412
Full text of H statements : see section 16	

2.2. Label elements

Labelling according to the United Nations GHS (Rev. 4, 2011) Hazard pictograms (GHS UN)

Signal word (GHS UN) Hazardous ingredients

Hazard statements (GHS UN)

Precautionary statements (GHS UN)



Danger

Formaldehyde, telomer with 1,3-benzenedimethanamine, 1,3-benzenediol and ethenylbenzene; resorcinol; m-Xylylenediamine
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H412 - Harmful to aquatic life with long lasting effects.

P262 - Do not get in eyes, on skin, or on clothing.
P280 - Wear eye protection, protective clothing, protective gloves.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove




Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

contact lenses, if present and easy to do. Continue rinsing. P333+P313 - If skin irritation or rash occurs: Get medical advice, medical attention. P337+P313 - If eye irritation persists: Get medical advice, medical attention. P302+P352 - IF ON SKIN: Wash with plenty of water.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
m-Xylylenediamine	(CAS-No.) 1477-55-0	25 - 40	Acute toxicity (oral), Category 4, H302 Acute toxicity (inhalation:dust,mist) Category 4, H332 Skin corrosion/irritation, Category 1B, H314 Serious eye damage/eye irritation, Category 1, H318 Skin sensitisation, category 1B, H317 Hazardous to the aquatic environment — Acute Hazard, Category 3, H402 Hazardous to the aquatic environment — Chronic Hazard, Category 3, H412
Formaldehyde, telomer with 1,3-benzenedimethanamine, 1,3- benzenediol and ethenylbenzene	(CAS-No.) 710292-85-6	10 - 25	Skin sensitisation, category 1B, H317 Hazardous to the aquatic environment — Acute Hazard, Category 2, H401 Hazardous to the aquatic environment — Chronic Hazard, Category 2, H411
resorcinol	(CAS-No.) 108-46-3	0,1 - 1	Acute toxicity (oral), Category 4, H302 Skin corrosion/irritation, Category 2, H315 Serious eye damage/eye irritation, Category 1, H318 Skin sensitisation, category 1B, H317 Specific target organ toxicity — Single exposure, Category 1, H370 Specific target organ toxicity — Single exposure, Category 2, H371 Hazardous to the aquatic environment — Acute Hazard, Category 1, H400 Hazardous to the aquatic environment — Chronic Hazard, Category 3, H412

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures generalNever give anything by mouth to an unconscious person. If you feel unwell, seek medical
advice (show the label where possible).First-aid measures after inhalationRemove person to fresh air and keep comfortable for breathing.First-aid measures after skin contactWash with plenty of water/.... Take off immediately all contaminated clothing. Wash
contaminated clothing before reuse. If skin irritation or rash occurs: Get immediate medical
advice/attention.



Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

First-aid measures after eye contact	Get immediate medical advice/attention. Immediately rinse with water for a prolonged period while holding the eyelids wide open. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist.
First-aid measures after ingestion	Do not induce vomiting. Rinse mouth. Immediately call a POISON CENTER/doctor.
4.2 Most important symptoms and offect	s both acute and delayed
4.2. Wost important symptoms and enects	s, both acute and delayed
Symptoms/effects	Causes severe skin burns and eye damage.
Symptoms/effects after inhalation	May cause an allergic skin reaction.

Symptoms/effects after inhalation Symptoms/effects after eye contact Potential adverse human health effects and symptoms May cause an allergic skin reaction. Causes serious eye damage. No additional information available.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures			
5.1. Extinguishing media			
Suitable extinguishing media	Foam. Dry powder. Carbon dioxide. Water spray. Sand.		
Unsuitable extinguishing media	Do not use a heavy water stream.		
5.2. Special hazards arising from the substance or mixture			
No additional information available			

5.3. Advice for firefighters

Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	Self-contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures			
C.4. Developed processitions, protective enviro			
6.1. Personal precautions, protective equip	oment and emergency procedures		
General measures	Spilled material may present a slipping hazard.		
6.1.1.For non-emergency personnel			
Emergency procedures	Evacuate unnecessary personnel.		
6.1.2.For emergency responders			
Protective equipment	Use personal protective equipment as required. Equip cleanup crew with proper protection.		
Emergency procedures	Ventilate area.		

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment. Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations. After curing, the product can be disposed of with household waste.

6.3. Methods and material for containment and cleaning up		
For containment	Collect spillage.	
Methods for cleaning up	This material and its container must be disposed of in a safe way, and as per local legislation. Mechanically recover the product. On land, sweep or shovel into suitable containers. Store away from other materials.	
Other information	Dispose of materials or solid residues at an authorized site.	



Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

SECTION 7: Handling and st	orage
7.1. Precautions for safe handling	
Precautions for safe handling	Wear personal protective equipment. Avoid contact with skin and eyes. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid contact during pregnancy/while nursing.
Hygiene measures	Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.
7.2. Conditions for safe storage, in	cluding any incompatibilities
Technical measures	Comply with applicable regulations.
Storage conditions	Protect from sunlight. Store in a well-ventilated place.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Storage temperature	5 - 25 °C
Heat and ignition sources	Keep away from heat and direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional information	The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product.
8.2. Appropriate engineering controls	
Appropriate engineering controls	Ensure good ventilation of the work station.
Environmental exposure controls	Avoid release to the environment.
Consumer exposure controls	Avoid contact during pregnancy/while nursing.
Other information	Do not eat, drink or smoke during use.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection

Wear protective gloves. The permeation time is not the maximum wearing time! Generally speaking, it must be reduced. Contact with either mixtures of substances or different substances may shorten the protective function's effective duration.

Туре	Material	Permeation	Thickness (mm)	Penetrati on	Standard
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	> 0,4		EN 374
Eye protection Wear security glasses which protect from splashes					
Туре	Use	Characteristics	Standard		
Safety glasses	Droplet	clear	EN 166, EN 170		



HIT-RE 100, B Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Skin and body protection

Wear suitable protective clothing



8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	Thixotropic paste.
Colour	Red-brown to black.
Odour	Amine-like.
Odour threshold	No data available
рН	11.5
Relative evaporation rate (butylacetate=1)	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Non flammable.
Vapour pressure	No data available
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	1.41 g/cm³ DIN EN ISO 1183-3
Solubility	insoluble in water.
Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	43 - 57 Pa·s HN-0333
Explosive properties	No data available
Oxidising properties	No data available
Explosive limits	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive vapours.

10.2. Chemical stability

Stable under normal conditions.



Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

10.3. Possibility of hazardous reactions

No additional information available.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition generates : fume. Carbon monoxide. Carbon dioxide. Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Harmful if swallowed.
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified
ATE CLP (oral)	1706.776 mg/kg bodyweight
Formaldehyde, telomer with 1,3-benzenedim	ethanamine, 1,3-benzenediol and ethenylbenzene (710292-85-6)
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg
resorcinol (108-46-3)	
LD50 oral	301 mg/kg
m-Xylylenediamine (1477-55-0)	
LD50 oral rat	1090 mg/kg
LD50 oral	660 mg/kg
LD50 dermal rat	> 3100 mg/kg
LD50 dermal	> 3100 mg/kg
LC50 inhalation rat (Dust/Mist - mg/l/4h)	1.34 mg/l/4h
Skin corrosion/irritation	Causes severe skin burns and eye damage.
	pH: 11.5
Serious eye damage/irritation	Serious eye damage, category 1, implicit
	pH: 11.5
Respiratory or skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
Potential adverse human health effects and symptoms	No additional information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water

Harmful to aquatic life with long lasting effects.



Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Hazardous to the aquatic environment, short-term (acute)	Harmful to aquatic life.
Classification procedure (Hazardous to the aquatic environment, short-term (acute))	Expert judgment
Hazardous to the aquatic environment, long-term (chronic)	Harmful to aquatic life with long lasting effects.
Classification procedure (Hazardous to the aquatic environment, long-term (chronic))	Expert judgment
Formaldehyde, telomer with 1,3-benzenedime	thanamine, 1,3-benzenediol and ethenylbenzene (710292-85-6)
LC50 fish 1	>= 50 mg/l
LC50 other aquatic organisms 1	>= 31.8 mg/l
EC50 Daphnia 1	2.4 mg/l
NOEC chronic algae	6.25 mg/l
resorcinol (108-46-3)	
EC50 Daphnia 1	1.28 mg/l
m-Xylylenediamine (1477-55-0)	
LC50 fish 1	75 mg/l
LC50 other aquatic organisms 1	20.3 ppb
EC50 Daphnia 1	15 mg/l
LOEC (chronic)	15 mg/l
NOEC (acute)	10.5 mg/kg
NOEC (chronic)	4.7 mg/l
NOEC chronic crustacea	4.7 mg/l

12.2. Persistence and degradability

HIT-RE 100, B	
Persistence and degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential

HIT-RE 100, B		
Bioaccumulative potential Not established.		
Formaldehyde, telomer with 1,3-benzenedime	ethanamine, 1,3-benzenediol and ethenylbenzene (710292-85-6)	
Bioconcentration factor (BCF REACH)	>= 12.9	
Log Pow	5.14	

12.4. Mobility in soil

	Formaldehyde, telomer with 1,3-benzenedimethanamine, 1,3-benzenediol and ethenylbenzene (710292-85-6)		
Log Pow See section 12.1 on ecotoxicology	Log Pow	See section 12.1 on ecotoxicology	

12.5. Other adverse effects

Ozone	Not classified
Other adverse effects	No additional information available
Other information	Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	After curing, the product can be disposed of with household waste Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations. Packaging contaminated by the product : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	Avoid release to the environment.



Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	ΙΑΤΑ	RID
14.1. UN number			
3259	3259	3259	3259
14.2. UN proper shipping n	ame		
AMINES, SOLID, CORROSIVE, N.O.S. (m-Xylylenediamine)	AMINES, SOLID, CORROSIVE, N.O.S. (m-Xylylenediamine)	Amines, solid, corrosive, n.o.s. (m- Xylylenediamine)	AMINES, SOLID, CORROSIVE, N.O.S. (m-Xylylenediamine)
Transport document description	on		
UN 3259 AMINES, SOLID, CORROSIVE, N.O.S. (m- Xylylenediamine), 8, II, (E)	UN 3259 AMINES, SOLID, CORROSIVE, N.O.S. (m- Xylylenediamine), 8, II	UN 3259 Amines, solid, corrosive, n.o.s. (m-Xylylenediamine), 8, II	UN 3259 AMINES, SOLID, CORROSIVE, N.O.S. (m- Xylylenediamine), 8, II
14.3. Transport hazard clas	ss(es)		
8	8	8	8
8	8	8	8
14.4. Packing group			
Ш	II	Ш	П
14.5. Environmental hazards			
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available			

14.6. Special precautions for user

- Overland transport

Classification code (ADR)	C8
Special provisions (ADR)	274
Limited quantities (ADR)	1kg
Packing instructions (ADR)	P002, IBC08
Mixed packing provisions (ADR)	MP10
Transport category (ADR)	2
Orange plates	80
	3259
	0202
Tunnel restriction code (ADR)	E
Tunnel restriction code (ADR) - Transport by sea	E
Tunnel restriction code (ADR) - Transport by sea Special provisions (IMDG)	E 274
Tunnel restriction code (ADR) - Transport by sea Special provisions (IMDG) Limited quantities (IMDG)	E 274 1 kg
Tunnel restriction code (ADR) - Transport by sea Special provisions (IMDG) Limited quantities (IMDG) Packing instructions (IMDG)	E 274 1 kg P002
Tunnel restriction code (ADR) - Transport by sea Special provisions (IMDG) Limited quantities (IMDG) Packing instructions (IMDG) EmS-No. (Fire)	E 274 1 kg P002 F-A
Tunnel restriction code (ADR) - Transport by sea Special provisions (IMDG) Limited quantities (IMDG) Packing instructions (IMDG) EmS-No. (Fire) EmS-No. (Spillage)	E 274 1 kg P002 F-A S-B



Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Stowage and segregation (IMDG) MFAG-No	Separated from' acids. 154
- Air transport	
PCA packing instructions (IATA)	859
PCA max net quantity (IATA)	15kg
CAO packing instructions (IATA)	863
Special provisions (IATA)	A3
- Rail transport	
Special provisions (RID)	274
Limited quantities (RID)	1kg
Packing instructions (RID)	P002, IBC08
Carriage prohibited (RID)	No

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

No additional information available

SECTION 16: Other information

SDS Major/Minor	None
Issue date	11/05/2020
Revision date	11/05/2020
Supersedes	11/07/2018

Indication of changes:

Section	Changed item	Change	Comments
2.1	Classification (GHS UN)	Modified	
2.2	Hazard statements (GHS UN)	Modified	
16	Additional information	Added	



Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Abbreviations and acronyms	ADN - European Agreement concerning the International Carriage of Dangerous Goods by
	Inland Waterways
	ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
	ATE - Acute Toxicity Estimate
	BCF - Bioconcentration factor
	CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
	DMEL - Derived Minimal Effect level
	DNEL - Derived-No Effect Level
	EC50 - Median effective concentration
	IARC - International Agency for Research on Cancer
	IATA - International Air Transport Association
	IMDG - International Maritime Dangerous Goods
	LC50 - Median lethal concentration
	LD50 - Median lethal dose
	LOAEL - Lowest Observed Adverse Effect Level
	NOAEC - No-Observed Adverse Effect Concentration
	NOAEL - No-Observed Adverse Effect Level
	NOEC - No-Observed Effect Concentration
	OECD - Organisation for Economic Co-operation and Development
	PBT - Persistent Bioaccumulative Toxic
	PNEC - Predicted No-Effect Concentration
	REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
	RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
	SDS - Safety Data Sheet
	vPvB - Very Persistent and Very Bioaccumulative
Other information	None.
Full text of H-statements:	

	H302	Harmful if swallowed.
	H314	Causes severe skin burns and eye damage.
	H315	Causes skin irritation.
	H317	May cause an allergic skin reaction.
	H318	Causes serious eye damage.
	H332	Harmful if inhaled.
	H370	Causes damage to organs.
	H371	May cause damage to organs.
	H400	Very toxic to aquatic life.
	H401	Toxic to aquatic life
	H402	Harmful to aquatic life
	H411	Toxic to aquatic life with long lasting effects.
	H412	Harmful to aquatic life with long lasting effects.

SDS_UN_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



1.1. Product identifier

HIT-RE 100, A Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011) Issue date: 11/05/2020

Revision date: 11/05/2020

Supersedes: 11/07/2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Version: 3.0

Product form	Mixture
Product name	HIT-RE 100, A
UN-No. (ADR)	1759
Product code	BU Anchor
1.2. Relevant identified uses of the substa	nce or mixture and uses advised against
Use of the substance/mixture	For professional use only Composite mortar component for fasteners in the construction industry
1.3. Details of the supplier of the safety da	ta sheet
Supplier Hilti (Hong Kong) Ltd. 701-704, 7/F, Tower A, Manulife Financial Centre 223 Wai Yip Street, Kwun Tong Kowloon - Hong Kong T +852 27734 700 hksales@hilti.com	Department issuing data specification sheet Hilti Entwicklungsgesellschaft mbH Hiltistraße 6 86916 Kaufering - Deutschland T +49 8191 906876 anchor.hse@hilti.com
1.4. Emergency telephone number	
Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +852 27734 700

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations	GHS (Rev. 4, 2011)
Skin Corr. 1C	H314
Skin Sens. 1	H317
Muta. 2	H341
Repr. 1B	H360
Aquatic Acute 2	H401
Aquatic Chronic 2	H411
Full text of H statements : see section 16	

2.2. Label elements

Labelling according to the United Nations GHS (Rev. 4, 2011)

Hazard pictograms (GHS UN)

Signal word (GHS UN) Hazardous ingredients

Hazard statements (GHS UN)



Danger

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol; Reaction products of hexane-1,6-diol with 2-(chloromethyl); 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane; trimethylolpropane triglycidylether

H314 - Causes severe skin burns and eye damage.

H317 - May cause an allergic skin reaction.

H341 - Suspected of causing genetic defects.

H360 - May damage fertility.





Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

	H411 - Toxic to aquatic life with long lasting effects.
Precautionary statements (GHS UN)	 P262 - Do not get in eyes, on skin, or on clothing. P280 - Wear eye protection, protective clothing, protective gloves. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P333+P313 - If skin irritation or rash occurs: Get medical advice, medical attention. P337+P313 - If eye irritation persists: Get medical advice, medical attention. P302+P352 - IF ON SKIN: Wash with plenty of water.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
2,2'-[(1-methylethylidene)bis(4,1- phenyleneoxymethylene)]bisoxirane	(CAS-No.) 1675-54-3	25 - 40	Flammable liquids Not classified Skin corrosion/irritation, Category 2, H315 Serious eye damage/eye irritation, Category 2A, H319 Skin sensitisation, Category 1, H317 Hazardous to the aquatic environment — Acute Hazard, Category 2, H401 Hazardous to the aquatic environment — Chronic Hazard, Category 2, H411
Formaldehyde, oligomeric reaction products with 1-chloro-2,3- epoxypropane and phenol	(CAS-No.) 9003-36-5	10 - 25	Skin corrosion/irritation, Category 2, H315 Serious eye damage/eye irritation, Category 2A, H319 Skin sensitisation, Category 1, H317 Hazardous to the aquatic environment — Chronic Hazard, Category 2, H411
Reaction products of hexane-1,6-diol with 2-(chloromethyl)	(CAS-No.) 933999-84-9	10 - 25	Flammable liquids Not classified Acute toxicity (oral), Category 5, H303 Skin corrosion/irritation, Category 2, H315 Serious eye damage/eye irritation, Category 2A, H319 Skin sensitisation, Category 1, H317 Hazardous to the aquatic environment — Acute Hazard, Category 3, H402 Hazardous to the aquatic environment — Chronic Hazard, Category 3, H412
trimethylolpropane triglycidylether	(CAS-No.) 30499-70-8	5 - 10	Skin corrosion/irritation, Category 1C, H314 Serious eye damage/eye irritation, Category 1, H318 Skin sensitisation, category 1B, H317 Germ cell mutagenicity, Category 2, H341 Reproductive toxicity, Category 1B, H360 Hazardous to the aquatic environment — Chronic Hazard, Category 2, H411

Full text of H-statements: see section 16



Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures general	Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	Gently wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get immediate medical advice/attention.
First-aid measures after eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	Rinse mouth. Get medical advice/attention. Do not induce vomiting. Obtain emergency medical attention.
4.2. Most important symptoms and effe	cts, both acute and delayed
Symptoms/effects after inhalation	May cause an allergic skin reaction.
Symptoms/effects after skin contact	Causes skin irritation.
Symptoms/effects after eve contact	Causes serious eve irritation.

No additional information available.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

symptoms

Potential adverse human health effects and

SECTION 5: Firefighting measures				
5.1. Extinguishing media				
Suitable extinguishing media	Water spray. Carbon dioxide. Dry powder. Foam. Sand.			
Unsuitable extinguishing media	Do not use a heavy water stream.			
5.2. Special hazards arising from the subst	ance or mixture			
No additional information available				
5.3. Advice for firefighters				
Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.			
Protection during firefighting	Self-contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.			

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures				
General measures	Spilled material may present a slipping hazard.			
6.1.1.For non-emergency personnel				
Emergency procedures	Evacuate unnecessary personnel.			
6.1.2.For emergency responders				
Protective equipment	Use personal protective equipment as required. Equip cleanup crew with proper protection.			
Emergency procedures	Ventilate area.			



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6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment. Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations. After curing, the product can be disposed of with household waste.

6.3. Methods and material for containment and cleaning up			
For containment	Collect spillage.		
Methods for cleaning up	This material and its container must be disposed of in a safe way, and as per local legislation. Mechanically recover the product. On land, sweep or shovel into suitable containers. Store away from other materials.		
Other information	Dispose of materials or solid residues at an authorized site.		

SECTION 7: Handling and storage	
7.1 Processions for sofe handling	
7.1. Freeducions for sale handling	
Precautions for safe handling	Wear personal protective equipment. Avoid contact with skin and eyes. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Hygiene measures	Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.
7.2. Conditions for safe storage, including	any incompatibilities
Storage conditions	Protect from sunlight.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Storage temperature	5 - 25 °C
Heat and ignition sources	Keep away from heat and direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional information	The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product.
8.2. Appropriate engineering controls	
Appropriate engineering controls	Ensure good ventilation of the work station.
Environmental exposure controls	Avoid release to the environment.
Consumer exposure controls	Avoid contact during pregnancy/while nursing.
Other information	Do not eat, drink or smoke during use.



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according to the United Nations GHS (Rev. 4, 2011)

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection

Wear protective gloves. The permeation time is not the maximum wearing time! Generally speaking, it must be reduced. Contact with either mixtures of substances or different substances may shorten the protective function's effective duration.

Туре	Material	Permeation	Thickness (mm)	Penetrati on	Standard
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	> 0,4		EN 374
Eye protection		Wear security glasses which protect from splashes			

 Type
 Use
 Characteristics
 Standard

 Safety glasses
 Droplet
 clear
 EN 166, EN 170

Skin and body protection





8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	Thixotropic paste.
Colour	Light grey.
Odour	characteristic.
Odour threshold	No data available
рН	6.2
Relative evaporation rate (butylacetate=1)	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Non flammable.
Vapour pressure	No data available
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	1.46 g/ml DIN EN ISO 1183-3
Solubility	insoluble in water.
Log Pow	No data available
Viscosity, kinematic	No data available



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Viscosity, dynamic	36 - 53 Pa·s HN-0333
Explosive properties	Product is not explosive
Oxidising properties	No data available
Explosive limits	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition generates : fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane (1675-54-3)

LD50 dermal rat	> 2000 mg/kg (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)	
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (9003-36-5)		
LD50 oral rat	> 5000 mg/kg bodyweight (Rat; ECHA)	
LD50 dermal rat	> 2000 mg/kg bodyweight (Rat; ECHA)	
Reaction products of hexane-1,6-diol with 2-(chloromethyl) (933999-84-9)	
LD50 oral rat	3010 mg/kg	
LD50 dermal rat	> 2000 mg/kg	
Skin corrosion/irritation	Causes severe skin burns and eye damage.	
	pH: 6.2	
Serious eye damage/irritation	Serious eye damage, category 1, implicit	
	pH: 6.2	
Respiratory or skin sensitisation	May cause an allergic skin reaction.	
Germ cell mutagenicity	Suspected of causing genetic defects.	
Carcinogenicity	Not classified	



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Reproductive toxicity	May damage fertility
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
Potential advarge human health offects and	No additional information available

Potential adverse human health effects and symptoms

No additional information available.

SECTION 12: Ecological information 12.1. Toxicity Ecology - water Toxic to aquatic life with long lasting effects. Hazardous to the aquatic environment, short-Toxic to aquatic life. term (acute) Classification procedure (Hazardous to the Calculation method aquatic environment, short-term (acute)) Hazardous to the aquatic environment, long-Toxic to aquatic life with long lasting effects. term (chronic) Classification procedure (Hazardous to the Calculation method aquatic environment, long-term (chronic)) 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane (1675-54-3) LC50 fish 1 2.3 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value, Nominal concentration)

EC50 Daphnia 1	2 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system,	
	Fresh water, Experimental value)	
LC50 fish 2	2.3 mg/l (96 h; Oncorhynchus mykiss; Nominal concentration)	
Threshold limit algae 1	> 11 mg/l (72 h; Scenedesmus sp.)	
Threshold limit algae 2	4.2 mg/l (72 h; Scenedesmus sp.)	
Reaction products of hexane-1,6-diol with 2-(chloromethyl) (933999-84-9)		
LC50 fish 1	30 mg/l	
LC50 other aquatic organisms 1	23.1 mg/l	
EC50 Daphnia 1	47 mg/l	
NOEC (acute)	18 mg/l	

12.2. Persistence and degradability

HIT-RE 100, A		
Persistence and degradability May cause long-term adverse effects in the environment.		
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane (1675-54-3)		
Persistence and degradability	Not readily biodegradable in water.	

12.3. Bioaccumulative potential

HIT-RE 100, A		
Bioaccumulative potential	Not established.	
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane (1675-54-3)		
BCF other aquatic organisms 1	31 (Estimated value, Fresh weight)	
Log Pow	3 (Estimated value, 25 °C)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).	

12.4. Mobility in soil

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane (1675-54-3)		
Surface tension	59 mN/m (20 °C, 0.09 g/l)	
Log Pow	See section 12.1 on ecotoxicology	
Log Koc	See section 12.1 on ecotoxicology	
Ecology - soil	Low potential for adsorption in soil.	

12.5. Other adverse effects



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Ozone	Not classified
Other adverse effects	No additional information available
Other information	Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) Product/Packaging disposal recommendations	Disposal must be done according to official regulations. After curing, the product can be disposed of with household waste Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations. Packaging contaminated by the product : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	ΙΑΤΑ	RID
14.1 UN number			
1759	1759	1759	1759
14.2. UN proper shipping n	ame		
CORROSIVE SOLID, N.O.S. (trimethylolpropane triglycidylether)	CORROSIVE SOLID, N.O.S. (trimethylolpropane triglycidylether)	Corrosive solid, n.o.s. (trimethylolpropane triglycidylether)	CORROSIVE SOLID, N.O.S. (trimethylolpropane triglycidylether)
Transport document descript	on		
UN 1759 CORROSIVE SOLID, N.O.S. (trimethylolpropane triglycidylether), 8, III, (E), ENVIRONMENTALLY HAZARDOUS	UN 1759 CORROSIVE SOLID, N.O.S. (trimethylolpropane triglycidylether), 8, III, MARINE POLLUTANT/ENVIRONMENTALL Y HAZARDOUS	UN 1759 Corrosive solid, n.o.s. (trimethylolpropane triglycidylether), 8, III, ENVIRONMENTALLY HAZARDOUS	UN 1759 CORROSIVE SOLID, N.O.S. (trimethylolpropane triglycidylether), 8, III, ENVIRONMENTALLY HAZARDOUS
14.3. Transport hazard clas	ss(es)		
8	8	8	8
14.4. Packing group			
	III	111	111
14.5. Environmental hazards			
Dangerous for the environment : Yes	Dangerous for the environment : Yes Marine pollutant : Yes	Dangerous for the environment : Yes	Dangerous for the environment : Yes
No supplementary information available			

14.6. Special precautions for user

- Overland transport

Classification code (ADR)



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Special provisions (ADR)	274
Limited quantities (ADR)	5kg
Packing instructions (ADR)	P002, IBC08, LP02, R001
Mixed packing provisions (ADR)	MP10
Transport category (ADR)	3
Orange plates	80 1759
Tunnel restriction code (ADR)	E
- Transport by sea	
Special provisions (IMDG)	223, 274
Packing instructions (IMDG)	P002, LP02
EmS-No. (Fire)	F-A
EmS-No. (Spillage)	S-B
Stowage category (IMDG)	A
- Air transport	
PCA packing instructions (IATA)	860
PCA max net quantity (IATA)	25kg
CAO packing instructions (IATA)	864
Special provisions (IATA)	A3, A803
- Rail transport	
Special provisions (RID)	274
Packing instructions (RID)	P002, IBC08, LP02, R001
Carriage prohibited (RID)	No

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

No additional information available

SECTION 16: Other information				
SDS Major/Minor	None			
Issue date	11/05/2020			
Revision date	11/05/2020			
Supersedes	11/07/2018			

Indication of changes:

Section	Changed item	Change	Comments
2.1	Classification (GHS UN)	Added	
2.2	Hazard statements (GHS UN)	Added	
9	рН	Added	
14	Transport information	Modified	
16	Additional information	Added	



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Abbreviations and acronyms	ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
	ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
	ATE - Acute Toxicity Estimate
	BCF - Bioconcentration factor
	CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
	DMEL - Derived Minimal Effect level
	DNEL - Derived-No Effect Level
	EC50 - Median effective concentration
	IARC - International Agency for Research on Cancer
	IATA - International Air Transport Association
	IMDG - International Maritime Dangerous Goods
	LC50 - Median lethal concentration
	LD50 - Median lethal dose
	LOAEL - Lowest Observed Adverse Effect Level
	NOAEC - No-Observed Adverse Effect Concentration
	NOAEL - No-Observed Adverse Effect Level
	NOEC - No-Observed Effect Concentration
	OECD - Organisation for Economic Co-operation and Development
	PBT - Persistent Bioaccumulative Toxic
	PNEC - Predicted No-Effect Concentration
	REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
	RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
	SDS - Safety Data Sheet
	vPvB - Very Persistent and Very Bioaccumulative
Full text of H-statements:	
H303 May be harmful if swallowed	

H303	May be harmful if swallowed
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

SDS_UN_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



Hilti HIT-RE100 Epoxy Anchor Job Reference

Year Project Name	Customer Name	Project type
2020 LO FAI RD (EAST) TPTL 223 & 229	UNISTRESS BUILDING CONSTRUCTION	Residential
2020 CASTLE PEAK RD, AREA 48 (547)	AGGRESSIVE CONSTRUCTION COMPANY	Residential
2020 VEHICLE EXAM CENTRE	HIP HING JOINT VENTURE (VEC)	Industrial
2020 R6 CROSS BAY LINK, TKO (NE/2017/07)	BUILD KING CIVIL ENGINEERING LTD	Infrastructure
2020 SCHOOL (30 CLASSROOMS) - NEW - 7 STOREY WON	G PAUL Y. GENERAL CONTRACTORS LIMITED	Education
2020 New - Hospitality - 302 Jockey Club Road, Fanling	SHUI ON CONSTRUCTION	Hospitality
2020 R6 TRUNK ROAD T2 ED/2018/04	BOUYGUES TRAVAUX PUBLICS	Infrastructure
2020 REHAB COMPLEX (SIU LAM HOSPITAL)	PENTA-OCEAN CONSTRUCTION CO. LTD	Health
2020 AREA 54 TUNG CHUNG HOUSING	AGGRESSIVE CONSTRUCTION COMPANY	Residential
2020 UNITED CHRISTIAN HOSPITAL	MAX STAR ENGINEERING LIMITED	Health
2021 CINGLEOT LOGISTICS CENTRE, AIRPORT - ALIBABA	ABLE CONTRACTORS LIMITED	Industrial
2021 LO FAI RD (EAST) TPTL 223 & 229	UNISTRESS BUILDING CONSTRUCTION	Residential
2021 YIN PING RD, TAI WO PING (6542)	KIN WING FOUNDATIONS LIMITED	Residential
2021 AREA 54 TUNG CHUNG HOUSING	AGGRESSIVE CONSTRUCTION COMPANY	Residential
2021 SIN FAT RD, KWUN TONG NKIL 6584	HIP HING CONSTRUCTION CO LTD	Residential
2021 SIU HONG, AREA 54 DD 132 TMTL 483	RIDGID PLUMBING LIMITED	Residential
2021 R6 CROSS BAY LINK, TKO (NE/2017/07)	BUILD KING CIVIL ENGINEERING LTD	Infrastructure
2021 R6 TKO BRIDGE & P2 ROAD NE/2015/02	GOOD MIND ENGINEERING LIMITED	Infrastructure
2021 R6 TKO-LAM TIN TUNNEL NE/2015/01	GOOD MIND ENGINEERING LIMITED	Infrastructure
2021 PAK SHEK YIU SHA RD (601)	CHINA OVERSEAS BUILDING	Residential
2022 CINGLEOT LOGISTICS CENTRE, AIRPORT - ALIBABA	ABLE CONTRACTORS LIMITED	Industrial
2022 SIU HONG, AREA 54 DD 132 TMTL 483	RIDGID PLUMBING LIMITED	Residential
2022 AREA 54 TUNG CHUNG HOUSING	AGGRESSIVE CONSTRUCTION COMPANY	Residential
2022 R6 TKO-LAM TIN TUNNEL NE/2015/01	LEIGHTON - CHINA STATE JOINT	Infrastructure
2022 98 HOW MING ST	RIDGID PLUMBING LIMITED	Office
2022 TAI WAI STATION NW RES	WORLD GENIUS CORPORATION LIMITED	Residential
2022 KAI TAK 1E SITE 2A&B (6557)	HIP HING CONSTRUCTION CO LTD	Office
2022 TUEN MUN AREA 29 WEST - PUBLIC HOUSING	AGGRESSIVE CONSTRUCTION COMPANY	Residential
2022 YIN PING RD, TAI WO PING (6542)	HIP HING CONSTRUCTION CO LTD	Residential
2022 TUEN MUN AREA 55 (463) RES	AGGRESSIVE CIVIL & FOUNDATION	Residential