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TEST REPORT

REPORT NO : 2017CB1587	PAGE : 1 OF 11
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Applicant : HAIHANG INSTRUMENT & DEVICES
No.15, Jalan 11/108C,
Taman Sungai Besi,
57100 Kuala Lumpur.

Manufacturer : LUZHOU QIYE FASTENING DEVICES CO. LTD.
Sichuan Province, China.

Product : Fastener Shooting Nail

Reference Standard/
Method of test : Company Specification :-
- Pull out test.

Description of sample : Four (4) pieces of Fastener Shooting Nail were tested at manufacturer
premise on 10th August 2017.
Model : N38
Type : Ø8.5 x 32mm

Date Received of
Complete Application : 07th August 2017

Job No./Ref. No. : J20171431260/SQAS/CCST/T.REC/MSL/10

Description of test
results : The test results for the submitted test samples are described in Page 2
to Page 11 of this test report.

Issued date : 13 SEP 2017

Approved Signatory


.....
(NORAZLAN ROSLANI)
Testing Executive




.....
(YM RAJA NOR SIHA RAJA ABD. HANAN)
Head
Civil & Construction Section
Testing Services Department

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A) DETAILS OF INSPECTION

LOCATION OF INSPECTION : MacGregor Malaysia Sdn. Bhd.
No. 21, Jalan Perindustrian PP2,
Taman Perindustrian Putra Permai, Bukit Serdang,
43300 Seri Kembangan, Selangor.

DATE OF INSPECTION : 10th August 2017

EQUIPMENT TO INSPECT : Fastener Shooting Nail

MODEL / TYPE : N38 / Ø8.5 x 32mm

REFERENCE DOCUMENT : Haihang Instrument & Services technical drawing

SCOPE OF INSPECTION : 1) Witness and inspect installation of Fastener Shooting Nail.
2) Witness and record pull out force test.
3) Observe samples and ceiling conditions.

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B) DESCRIPTION OF SAMPLE AND FIXTURES

ITEM REFERENCE	PHOTO	DESCRIPTION
Fastener Shooting Nail		4 pcs to be tested Model : N38 Type : Ø8.5 x 32mm
Shooting Gun		Shooting gun set
Threaded Lug		Threaded lug to connect shooting nail to hydraulic cylinder
Hydraulic Cylinder		Hydraulic cylinder with threaded leg and spacer
Hydraulic Hand Pump with Hoses		Brand : Hi-Force Model : HP110 Red pump : Hydraulic out Yellow pump : Hydraulic in
Pressure Gauge		Pressure gauge with valid calibration sticker

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C) PROCEDURE / TEST METHOD

1. Install two (2) Fastener Shooting Nail to ceiling beam around 11 feet height and two (2) to ceiling slab around 12 feet height (refer photo A.2).
2. Measure the penetration of Fastener Shooting Nail by using filler gauge (refer photo A.3).
3. Install appropriate pull out adaptor which consists of Threaded Leg, Hydraulic Cylinder, Spacer and Threaded Lug at ceiling (refer photo A.4).
4. Hydraulic Pump hoses then installed to complete the pull out fixtures (refer photo A.5).
5. Adjust threaded legs accordingly to ensure all four threaded legs are in contact to the beam / slab and fixtures are center in position.
6. Pre-tension the hydraulic cylinder spacer / lug against the fastener.
7. Increase hydraulic pressure gradually until the nail disengaged from the beam / slab. Record maximum load (refer photo A.6).
8. Remove the nail and pull out fixtures.
9. Repeat step 3 to step 8 for next three samples. Record observations (refer photo A.7).

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D) TEST RESULTS : FASTENER SHOOTING NAIL

FASTENER SHOOTING NAIL REFERENCE	COMPANY'S PULL OUT SPECIFICATION	RESULTS	OBSERVATION	REMARKS
Ceiling Beam – A	4 kN min.	45 bar (5.65 kN)	1- Fastener Shooting Nail was disengaged from ceiling beam. 2- Small crater formed at concrete beam.	Pass
Ceiling Beam – B	4 kN min.	32.5 bar (4.08kN)	1- Fastener Shooting Nail was disengaged from ceiling beam. 2- Small crater formed at concrete beam.	Pass
Ceiling Slab – C	4 kN min.	220 bar (27.63 kN)	1- Pressure stopped at 220bar. 2- Fastener Shooting Nail remains mounted at ceiling slab. 3- Threaded lug (connecting to body) was deforming. 4- Gap measured after pull out is 1.95mm.	Pass
Ceiling Slab – D	4 kN min.	220 bar (27.63 kN)	1- Pressure stopped at 220bar. 2- Fastener Shooting Nail remains mounted at ceiling slab. 3- Threaded lug (connecting to body) was deforming. 4- Gap measured after pull out is 2.00mm.	Pass

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E) ANNEXES

Photo A.1



Photo A.1 : Haihang Instrument & Services technical drawing of Pull Out tester arrangement.

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Photo A.2



Photo A.2.1 : Installing Fastener Shooting Nail to ceiling beam and ceiling slab.



Photo A.2.2 : Identified Fastener Shooting Nail installed at ceiling beam and ceiling slab.

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Photo A.3



Photo A.3.1 : Filler gauge unable to pass through at 0.05mm for both (A) and for (B).



Photo A.3.2 : Filler gauge unable to pass through at 1.55mm for (C) and 0.50mm for (D).

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Photo A.4



Photo A.4 : Installing tester unit and appropriate pull out adaptor at ceiling beam and ceiling slab.

Photo A.5



Photo A.5 : Hydraulic hoses installed to complete the pull out fixtures.

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Photo A.6



Photo A.6 : Hydraulic pressure were gradually increased until the nail disengaged from the beam / slab.

Photo A.7

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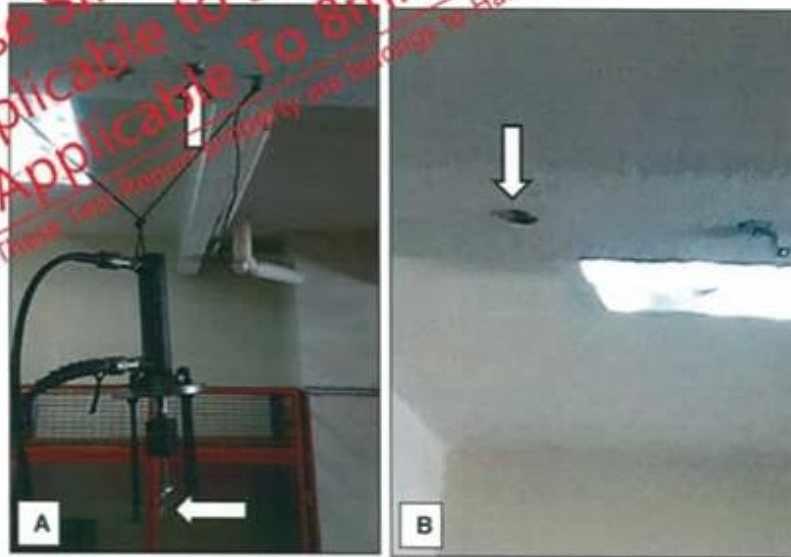


Photo A.7.1 : Fastener Shooting Nail after pull out for samples (A) and (B) at ceiling beam.

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Photo A.7.2 : Fastener Shooting Nail after pull out for samples (C) and (D) at ceiling slab.

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Photo A.7.3 : Gap measured after pull out for sample (C) and (D) at ceiling slab.

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