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Asian Institute of Technology

Km. 42 Paholyothin Highway, Klong Luang, Pathumthani, Thailand 12120

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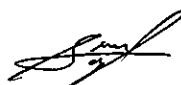
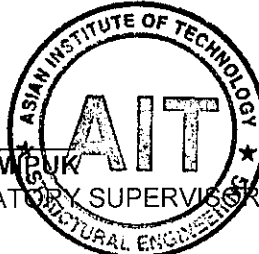
STRUCTURAL ENGINEERING LABORATORY
STRUCTURAL ENGINEERING FIELD OF STUDY
SCHOOL OF ENGINEERING AND TECHNOLOGY

TYPE OF TEST : PULL-OUT TEST IN AXIAL TENSION**TEST SAMPLE :** Three (3) specimens of "ANCHOR ROD HAS-E M10" bonded with "HILTI HVU" in concrete block having a size of 300 x 200 x 200 mm. were tested.**CLIENT :** HILTI (THAILAND) CO., LTD.**DATE OF TEST :** March 23, 2010**TEST RESULTS :**

Specimen No.	Type of Specimen	Diameter of Drill Hole (mm.)	Depth of Drill Hole (mm.)	Maximum Load (kg.)	Mode of Failure
1	HAS-E M10	12	95	3,960	-The anchor failure occurred when applied the maximum load.
2	HAS-E M10	12	95	1,740	-The anchor slipped from the concrete block when applied the maximum load.
3	HAS-E M10	12	95	3,480	-The anchor slipped from the concrete block when applied the maximum load.

Note : This report certifies the adequacy and representative character of the test sample only.

CHECKED & APPROVED BY :



DR. SUN SAYAM PUK
 SENIOR LABORATORY SUPERVISOR
 March 30, 2010

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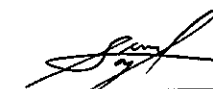
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TYPE OF TEST : PULL-OUT TEST IN AXIAL TENSION**TEST SAMPLE :** Three (3) specimens of "ANCHOR ROD HAS-E M12" bonded with "HILTI HVU" in concrete block having a size of 300 x 200 x 200 mm. were tested.**CLIENT :** HILTI (THAILAND) CO., LTD.**DATE OF TEST :** March 23, 2010**TEST RESULTS :**

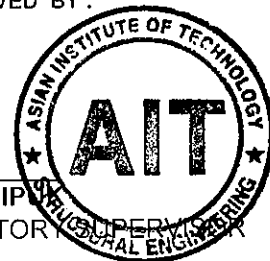
Specimen No.	Type of Specimen	Diameter of Drill Hole (mm.)	Depth of Drill Hole (mm.)	Maximum Load (kg.)	Mode of Failure
1	HAS-E M12	14	115	5,650	-The anchor failure occurred when applied the maximum load.
2	HAS-E M12	14	115	5,840	-The anchor failure occurred when applied the maximum load.
3	HAS-E M12	14	115	5,230	-The anchor failure occurred when applied the maximum load.

Note : This report certifies the adequacy and representative character of the test sample only.

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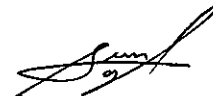
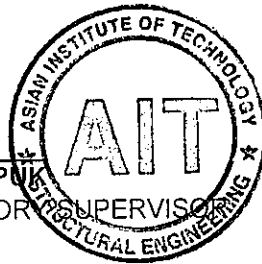
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TYPE OF TEST : PULL-OUT TEST IN AXIAL TENSION**TEST SAMPLE :** Three (3) specimens of "ANCHOR ROD HAS-E M16" bonded with "HILTI HVU" in concrete block having a size of 300 x 200 x 200 mm. were tested.**CLIENT :** HILTI (THAILAND) CO., LTD.**DATE OF TEST :** March 23, 2010**TEST RESULTS :**

Specimen No.	Type of Specimen	Diameter of Drill Hole (mm.)	Depth of Drill Hole (mm.)	Maximum Load (kg.)	Mode of Failure
1	HAS-E M16	18	130	10,230	-The anchor slipped from the concrete block when applied the maximum load.
2	HAS-E M16	18	130	11,500	-The anchor slipped from the concrete block when applied the maximum load.
3	HAS-E M16	18	130	11,490	-The anchor slipped from the concrete block when applied the maximum load.

Note : This report certifies the adequacy and representative character of the test sample only.

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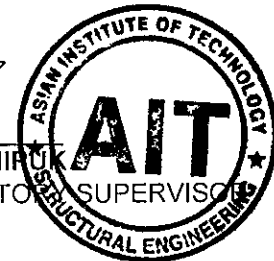
TYPE OF TEST : PULL-OUT TEST IN AXIAL TENSION**TEST SAMPLE :** Three (3) specimens of "ANCHOR ROD HAS-E M20" bonded with "HILTI HVU" in concrete block having a size of 300 x 200 x 200 mm. were tested.**CLIENT :** HILTI (THAILAND) CO., LTD.**DATE OF TEST :** March 23, 2010**TEST RESULTS :**

Specimen No.	Type of Specimen	Diameter of Drill Hole (mm.)	Depth of Drill Hole (mm.)	Maximum Load (kg.)	Mode of Failure
1	HAS-E M20	24	186	15,670	-The anchor slipped from the concrete block when applied the maximum load.
2	HAS-E M20	24	180	15,120	-The anchor slipped from the concrete block when applied the maximum load.
3	HAS-E M20	24	170	17,640	-The anchor slipped from the concrete block when applied the maximum load.

Note : This report certifies the adequacy and representative character of the test sample only.

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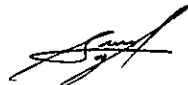
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TYPE OF TEST : PULL-OUT TEST IN AXIAL TENSION**TEST SAMPLE :** Three (3) specimens of "ANCHOR ROD HAS-E M24" bonded with "HILTI HVU" in concrete block having a size of 300 x 200 x 200 mm. were tested.**CLIENT :** HILTI (THAILAND) CO., LTD.**DATE OF TEST :** March 23, 2010**TEST RESULTS :**

Specimen No.	Type of Specimen	Diameter of Drill Hole (mm.)	Depth of Drill Hole (mm.)	Maximum Load (kg.)	Mode of Failure
1	HAS-E M24	28	215	27,830	-The anchor failure occurred when applied the maximum load.
2	HAS-E M24	28	215	27,100	-The anchor failure occurred when applied the maximum load.
3	HAS-E M24	28	215	27,540	-The anchor failure occurred when applied the maximum load.

Note : This report certifies the adequacy and representative character of the test sample only.

CHECKED & APPROVED BY :


 DR. SUN SAYAMIPO
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 March 30, 2010

